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ADDRESSES AND ORIGINAL ARTICLES

THE FIRST SEVEN MONTHS

A STUDY OF WAR-TIME MORTALITY IN LONDON

By Percy Stocks, M.D. Camb., D.P.H.

MEDICAL STATISTICAL OFFICER, GENERAL REGISTER OFFICE, LONDON

For many years past the Registrar-General's *Weekly Return* has contained a table of the deaths registered during the week in London administrative county, analysed by age and about 55 causes. Up to the end of 1939 these causes consisted of the *Short List* as used by medical officers of health with about 20 additional subdivisions; from the beginning of this year the list consists of the new *Abridged International List* for 1940 as adapted for local mortality statistics in England and Wales, together with the *Supplementary Abridged List* as used by the Registrar-General for special purposes.[1] The purpose of this table has been to provide a continuous index of current mortality from a large variety of causes, London being used as a sample—about one-tenth in normal times—of the country as a whole. Without it we should be unable until the end of the year to detect the changes which are taking place in mortality from separate causes other than the seven infectious diseases for which special weekly or quarterly returns are made from the 126 Great Towns and 148 Small Towns. The coding of the London deaths by cause is carried out by the Registrar-General in precisely the same manner as in the preparation of his *Annual Statistical Review* for the country as a whole, the counting being done by hand instead of by machines.

The only differences between these weekly records for London and those finally obtained for the *Annual Review*, up to the beginning of the war, were that—

(1) The inward transfer of deaths of London residents who died away from London was incomplete in the weekly record, being limited to deaths in the Outer Ring and in L.C.C. institutions outside the boundaries of London, and (2) the cause of death was corrected in a small proportion of instances from further information obtained by enquiries after the weekly record had been published.

The effect of these corrections was small; thus in 1938 the total deaths of London residents recorded in the weekly tables were 45,545, and in the *Annual Review* this number was increased to 46,456, or by less than 2 per cent., by the addition of deaths of London residents which were registered away from London and which could not be ascertained for the purposes of the weekly return.

At the beginning of the war it became necessary to suspend entirely both the outward transfer of deaths of non-residents and the inward transfer of deaths of residents for the purposes of the *Weekly Return*, and from Sept. 3 onwards the published weekly figures for London and the Great Towns have been the numbers of deaths registered within the respective areas without any correction for non-residents who may have died in hospitals or elsewhere within their boundaries. In London in 1938 the registered deaths without correction were about 9 per cent. in excess of the figures as published in the *Weekly Returns*. It is necessary, therefore, when comparing current London figures of deaths as given in the weekly tables with weekly figures in the pre-war period, to increase the latter in order to allow for the transfer factor. Another point to be remembered is that deaths of non-civilian males are no longer included in the weekly returns, but this difference is allowed for in the population adjustments mentioned below.

In view of the prolonged closure of schools, the large-scale dispersal of the child population and the exceptionally severe winter, a brief review of London's mortality according to age and cause from the middle of 1939 to the end of March, 1940, seems to be opportune. In the following tables comparisons have been made with corresponding weeks or quarters of the preceding and earlier years, with such correction for population movements and differences of compilation as is possible from the available information.

TABLE I.—DEATHS OF CHILDREN UNDER 5 YEARS OF AGE REGISTERED IN LONDON IN 3-WEEK PERIODS FROM JULY, 1939, TO MARCH, 1940, COMPARED WITH THE NUMBERS EXPECTED FROM THE ESTIMATED POPULATION IN EACH PERIOD IF THE DEATH-RATE HAD BEEN THE SAME AS IN THE CORRESPONDING WEEKS OF 1937–38 AND 1938–39

3-week period ending	Deaths registered in 1939–40	Expected numbers from mortality in—		Excess or defect in 1939–40 compared with—	
		1937–38	1938–39	1937–38	1938–39
July 22 ..	169	215	216	− 46	− 47
August 12	142	205	171	− 63	− 29
Sept. 2 ..	157	185	180	− 28	− 23
Sept. 23 ..	100	99	102	+ 1	− 2
Oct. 14 ..	98	95	90	+ 3	+ 8
Nov. 4 ..	75	114	97	− 39	− 22
Nov. 25 ..	106	169	128	− 63	− 22
Dec. 16 ..	136	263	184	− 127	− 48
Jan. 6 ..	117	288	245	− 171	− 128
Jan. 27 ..	196	339	263	− 143	− 67
Feb. 17 ..	210	288	236	− 78	− 26
March 9 ..	224	291	222	− 67	+ 2
March 30 ..	220	312	217	− 92	+ 3

Children under 15

The second column of table I shows the deaths at ages under 5 years registered in London during successive 3-week periods from July, 1939, to March, 1940. In the next two columns are the numbers expected if the rates of mortality had been the same as in the corresponding period of 1937–38 and 1938–39 respectively. These are approximate estimates based upon such information as is available as to the numbers of children of this age who were living in London at each period. There was a large outward movement at the end of August followed by a gradual return in subsequent months, and the depression in both curves at ages under five in the diagram from mid-August to the end of November is due in the main to this, for the curves represent numbers of deaths and not death-rates. The last columns of the table give the excess or defect of deaths compared with the expected numbers.

In the nine weeks of July and August there was a deficiency of about 100 deaths compared with the previous year and of 137 compared with the summer of 1937. Absence of children on holiday would not contribute to this, since the registered deaths in the pre-war period were estimated by applying the same correction to each year's deaths as published in the *Weekly Return*. Evidently this period of the summer of 1939 was exceptionally healthy for young children in London. The next 6 weeks up to mid-October showed no appreciable change over expectation based on previous years after allowing for the fall in population at the commencement of the war. As the

1. Manual of the International List of Causes of Death (5th revision, 1938). London. 1940. Pp. 29–35.

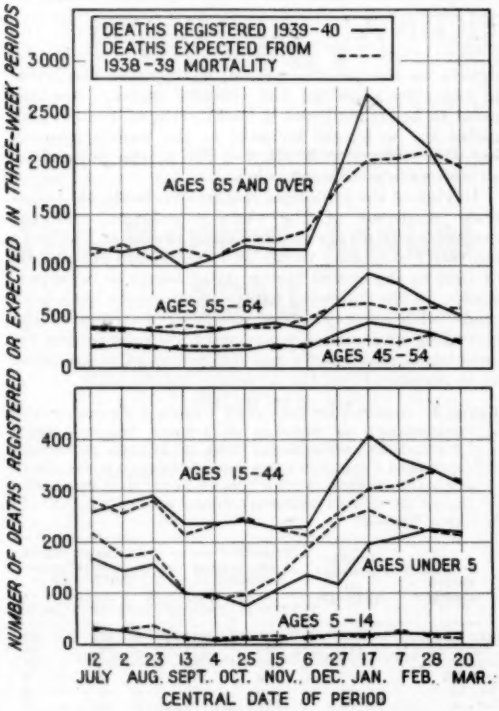
DEATHS REGISTERED 1939-40
DEATHS EXPECTED FROM 1938-39 MORTALITY
AGES 65 AND OVER
AGES 55-64
AGES 45-54
AGES 15-44
AGES UNDER 5
AGES 5-14
NUMBER OF DEATHS REGISTERED OR EXPECTED IN THREE-WEEK PERIODS
12 2 23 13 4 25 15 6 27 17 7 28 20
JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MAR.
CENTRAL DATE OF PERIOD

Diagram of deaths registered in London at six age groups from July, 1939, to March, 1940, compared with numbers expected in the same populations if mortality had been as in 1938–39.

autumn advanced the deficiency in deaths again became pronounced and reached its peak in the Christmas period. Despite the severe weather which followed and the prevalence of catarrhal affections in adults, the deficiency persisted, and during the 18 weeks from mid-October to mid-February there was an estimated saving of some 300 deaths compared with the number expected from 1938–39 mortality in the corresponding weeks. This saving is evident from the wide divergence between the curves in the diagram during this period. When comparison is made with the same weeks 2 years previously the saving was much greater, amounting to some 600 deaths. If the deaths during residence in the country of the dispersed children could also be ascertained and compared with the previous years' experience when they were in London, the total saving of life amongst all children under 5 with permanent homes in London would probably be found to have been considerably larger than the above figures, which deal only with the mortality of children who were living at the time in London.

TABLE A

Cause	Deaths 1939–40	Expected numbers from mortality in—		Excess or defect in 1939–40 from—	
		1938–39	1937–38	1938–39	1937–38
Diphtheria ..	3	12	19	− 9	− 16
Measles	1	—	26	+ 1	− 25
Whooping-cough	3	27	31	− 24	− 28
Cerebrospinal fever	9	2	14	+ 7	− 5
Tuberculosis ..	20	7	16	+ 13	+ 4
Bronchitis ..	24	32	42	− 8	− 18
Pneumonia ..	73	169	291	− 96	−218
Diarrhœa ..	32	106	125	− 74	− 93
Prematurity ..	109	128	137	− 19	− 28
Violence	24	19	15	+ 5	+ 9
All other causes	151	190	174	− 39	− 23
All causes ..	449	692	890	−243	−441

Analysis of the deaths at ages under 5 by cause gives a comparison for the 9 weeks from Nov. 26 to Jan. 27, the period when the greatest saving of life occurred (table A).

Pneumonia accounted for a saving of 96 out of a total saving of 243 lives compared with the previous winter, and for 218 out of a total saving of 441 compared with two years before. Diarrhœa came next with 74 and 93 respectively, whooping-cough with 24 and 28, bronchitis with 8 and 18, and diphtheria with 9 and 16. Measles was epidemic in 1937–38 and 26 deaths occurred in the period, but only 1 in the same weeks of 1939–40 when an epidemic was again expected. The decrease in prematurity deaths may have been due to many confinements having taken place outside London owing to special arrangements for expectant mothers. On the other hand deaths from tuberculosis and violence showed an increase on the previous years. The most remarkable features of this comparison are the great fall in pneumonia deaths notwithstanding the severe weather in January, and the almost complete absence of measles, whooping-cough and diphtheria deaths. Part of the fall in pneumonia deaths is doubtless due to development of the new therapy, and this may have contributed to the decrease in whooping-cough mortality, which is mainly from secondary pneumonia, but another important factor in the reduction of deaths from these causes must have been school closure during the period, reducing the carrying of infection to young children by their brothers and sisters of school age.

TABLE II.—DEATHS AT AGES 5–14 AND 15–44 REGISTERED IN LONDON, JULY, 1939, TO MARCH, 1940, WITH COMPARATIVE FIGURES FOR 1938–39 CORRECTED AS IN TABLE I

3-week period ending—	Deaths at ages 5–14			Deaths at ages 15–44		
	Registered in 1939–40	Expected from 1938–39	Excess or defect in 1939–40	Registered in 1939–40	Expected from 1938–39	Excess or defect in 1939–40
July 22 ..	33	28	+ 5	259	280	− 21
August 12 ..	27	28	− 1	274	256	+ 18
Sept. 2 ..	17	36	− 19	289	282	+ 7
Sept. 23 ..	12	11	+ 1	236	216	+ 20
Oct. 14 ..	8	9	− 1	237	235	+ 2
Nov. 4 ..	10	12	− 2	242	247	− 5
Nov. 25 ..	10	17	− 7	226	225	+ 1
Dec. 16 ..	16	12	+ 4	231	213	+ 18
Jan. 6 ..	18	18	—	332	257	+ 75
Jan. 27 ..	20	17	+ 3	408	303	+ 105
Feb. 17 ..	22	27	− 5	362	309	+ 53
March 9 ..	20	18	+ 2	343	337	+ 6
March 30 ..	21	13	+ 8	315	320	− 5

The school-children who remained in London also showed a slight reduction in deaths compared with the expected numbers obtained by applying the mortality-rates of the corresponding weeks of 1938–39 to the estimated population at ages 5–14 in London at each period. This population underwent great changes, which accounted for the depression in the curve of expected deaths during the late summer and early autumn. Comparison of the figures in table II and of the curves shows only a small deficiency in deaths between mid-October and mid-February, and it is evident that the pre-school children benefited as regards survival by the school closure and dispersal to a much greater extent than did the school-children themselves, a result which was to be expected from

TABLE III.—DEATHS OF CHILDREN UNDER 15 FROM WHOOPING-COUGH AND DIPHTHERIA REGISTERED IN LONDON DURING EACH QUARTER FROM JULY, 1931, TO MARCH, 1940 (EXCLUDING DEATHS OF NON-RESIDENTS BEFORE SEPT. 3, 1940)

Years	WHOOPING-COUGH				DIPHTHERIA			
	3rd	4th	1st	2nd	3rd	4th	1st	2nd
1931–32 ..	56	62	102	127	34	60	82	69
1932–33 ..	65	40	174	57	66	79	84	67
1933–34 ..	54	42	135	95	67	133	119	126
1934–35 ..	21	31	33	49	81	124	99	62
1935–36 ..	52	30	104	104	33	60	64	39
1936–37 ..	32	32	92	66	43	69	55	44
1937–38 ..	47	40	41	31	35	67	60	44
1938–39 ..	10	20	55	36	41	44	37	24
1939–40 ..	33	6	none	—	12	7	8	—

previous studies of the mortality of children from infectious and respiratory disease.

WHOOPING-COUGH, DIPHTHERIA AND MEASLES

In table III the deaths of London children under 15 from whooping-cough and diphtheria are given for each quarter of the year from mid-1931 to March, 1940, and the remarkable reduction during the last quarter of 1939 and first quarter of 1940 of both these causes of mortality is clearly seen. No correction has been made in this table for population movements or for inclusion of non-residents in these two quarters, but the utmost effect of such correction would be to double the deaths in the last quarter of 1939 and increase them by about 50 per cent. in the March quarter of 1940 in order to make them comparable with the two years preceding. This approximate correction would give, for deaths amongst equal numbers of children resident in London during the December and March quarters (table B):—

TABLE B

	1937–38	1938–39	1939–40
Diphtheria	137	81	26
Whooping-cough	81	75	12

Table IV gives the London deaths at all ages from measles in each quarter of the year from the last

TABLE IV.—DEATHS FROM MEASLES REGISTERED IN LONDON DURING EACH QUARTER FROM OCTOBER, 1910, TO MARCH, 1940*

Years	4th quarter	1st quarter	2nd quarter	3rd quarter	Total
1910–11	844	1581	690	159	3274
1911–12	140	202	433	376	1151
1912–13	788	845	549	124	2306
1913–14	52	148	346	412	958
1914–15	479	1120	946	131	2676
1915–16	75	159	291	187	712
1916–17	178	695	775	171	1819
1917–18	357	702	680	196	1935
1918–19	73	69	91	70	303
1919–20	129	529	404	51	1113
1920–21	23	27	68	39	157
1921–22	108	642	841	65	1656
1922–23	11	26	68	49	154
1923–24	224	907	388	20	1539
1924–25	20	11	45	41	117
1925–26	269	661	239	10	1170
1926–27	4	10	21	18	53
1927–28	130	813	510	27	1480
1928–29	5	14	31	62	112
1929–30	87	546	439	41	1113
1930–31	9	14	16	17	56
1931–32	68	345	441	31	885
1932–33	7	10	19	26	62
1933–34	46	467	375	18	906
1934–35	4	2	3	1	10
1935–36	13	208	348	27	596
1936–37	2	4	6	3	15
1937–38	12	125	96	12	245
1938–39	none	2	none	none	2
1939–40	none	1	—	—	—

* Excluding deaths of non-residents before Sept. 3, 1940 and excluding deaths of non-civilians from that date onwards (see text).

quarter of 1910 to March, 1940, no correction being made for population changes. Since 1917–18 there has been a regular biennial periodicity in the epidemics which is clearly seen in the total column of the table. Under normal circumstances an epidemic was expected to commence in the last quarter of 1939, but compared with 221 deaths in the December and March quarters of 1935–36 and 137 deaths in the corresponding quarters of 1937–38 that was only 1 death in these quarters of 1939–40. This suggests that the epidemic failed to start on account of the attenuation of the

TABLE V.—DEATHS FROM MEASLES REGISTERED IN MANCHESTER AND LIVERPOOL DURING EACH QUARTER FROM OCTOBER, 1910, TO MARCH, 1940*

Years	MANCHESTER					LIVERPOOL				
	4th quarter	1st quarter	2nd quarter	3rd quarter	Total	4th quarter	1st quarter	2nd quarter	3rd quarter	Total
1910–11	69	48	197	62	376	85	101	121	52	359
1911–12	30	214	210	28	482	37	47	262	243	589
1912–13	37	89	107	58	291	312	143	94	58	607
1913–14	10	38	132	51	231	24	29	152	145	350
1914–15	77	155	226	34	492	195	94	121	30	440
1915–16	31	27	88	29	175	10	55	114	57	236
1916–17	38	134	129	14	315	36	85	245	57	423
1917–18	5	34	56	30	125	39	73	209	88	409
1918–19	45	12	33	16	106	34	17	8	2	61
1919–20	44	121	85	1	251	84	282	90	6	462
1920–21	none	1	1	none	2	none	5	50	56	111
1921–22	2	1	161	162	326	215	120	22	12	369
1922–23	31	13	42	21	107	4	48	119	108	279
1923–24	7	39	296	34	376	82	64	49	8	203
1924–25	2	17	28	9	56	25	223	144	20	412
1925–26	78	118	37	3	236	8	46	88	42	184
1926–27	2	3	2	11	18	45	126	145	26	342
1927–28	148	101	17	4	270	9	11	61	57	138
1928–29	none	4	7	18	29	40	173	181	57	451
1929–30	32	111	27	5	175	13	9	52	22	96
1930–31	3	3	8	4	18	99	275	67	10	451
1931–32	48	90	32	2	172	12	48	175	52	287
1932–33	1	none	2	6	9	28	74	154	36	292
1933–34	39	86	7	1	133	24	124	91	7	246
1934–35	1	1	2	5	9	2	4	33	39	78
1935–36	88	100	16	none	204	75	138	34	1	248
1936–37	none	2	3	3	8	none	none	1	1	2
1937–38	37	46	13	none	96	112	103	9	none	224
1938–39	none	1	none	none	1	none	3	none	none	3
1939–40	none	2	—	—	—	1	none	—	—	—

* Excluding deaths of non-residents before Sept. 3, 1940, and excluding deaths of non-civilians from that date onwards (see text).

child population combined with school closure. By the end of the year 1939, when the epidemic was due to begin, the child density was not very greatly below the normal, and it seems probable that school closure was the more important factor in preventing an epidemic. It is possible, of course, that the delay in the expected measles epidemic was due to unknown factors which would have produced this result in normal circumstances, but table V shows that the same phenomenon has occurred in Manchester and Liverpool, and such a threefold coincidence is scarcely credible. In Manchester there was an unbroken biennial swing of epidemics from 1919–20 to 1937–38 and another epidemic was expected in the autumn and winter of 1939–40, but it failed to appear, as in London. In Liverpool the biennial periodicity has not been so regular, but it was maintained from 1923–24 to 1931–32 and again from 1933–34 to 1937–38, and at no period have two successive winters passed with less than 100 deaths in the December and March quarters, whereas in these periods of 1938–39 and 1939–40 the deaths numbered 3 and 1 respectively. The deaths in these two quarters of the past 12 years have been, in London, Manchester and Liverpool respectively (table C):—

TABLE C

London ..	19,	633,	23,	413,	17,	513,	6,	221,	6,	137,	2,	1.
Manchester ..	4,	143,	6,	138,	1,	125,	2,	188,	2,	83,	1,	2.
Liverpool ..	213,	22,	374,	60,	102,	148,	6,	213,	0,	215,	3,	1.

Young adults, aged 15-44

Table II shows that deaths at these ages were slightly in excess of the numbers expected from the previous year's mortality from July to mid-December, 1939, and the excess became considerable from mid-December to mid-February, amounting in the 9 weeks to some 230 deaths or about 27 per cent. of the estimate based on 1938–39. The curves in the diagram are in great contrast to those at ages under 5, the excess of mortality during the winter months

TABLE D

Cause	Deaths 1939–40	Expected numbers from 1938–39	Excess in 1939–40
Tuberculosis of respiratory system	301	228	+ 73
Influenza	34	20	+ 14
Pneumonia	65	60	+ 5
Bronchitis	56	28	+ 28
Other respiratory disease	29	10	+ 19
Heart diseases ..	130	92	+ 38
Other causes ..	487	433	+ 54
All causes ..	1102	871	+231

at 15–44 being similar in amount to the deficiency at ages under 5. Analysis of the principal causes of the increase during the 9 weeks gives the above result (table D).

The deaths prior to 1940 have been corrected for the differences of cause assignment arising out of the new method of joint-cause selection in accordance with the order of statement of causes on the medical certificate, which came into force from Jan. 1, 1940[2]; they have also been corrected for the effects of population movements and for exclusion of non-residents from the weekly returns prior to the war.

Tuberculosis of the respiratory system was responsible for an increase of some 70 deaths in the 9 weeks compared with the previous year, and similar increases

TABLE VI.—DEATHS AT AGES 45–54 AND 55–64 REGISTERED IN LONDON, JULY, 1939, TO MARCH, 1940, WITH COMPARATIVE FIGURES FOR 1938–39 CORRECTED AS IN TABLE I

3-week period ending—	Deaths at ages 45–54			Deaths at ages 55–64		
	Registered in 1939–40	Expected from 1938–39	Excess or defect in 1939–40	Registered in 1939–40	Expected from 1938–39	Excess or defect in 1939–40
July 22 ..	209	212	− 3	403	397	+ 6
August 12	225	225	—	395	388	+ 7
Sept. 2 ..	209	203	+ 6	377	395	− 18
,, 23 ..	187	212	− 25	353	419	− 66
Oct. 14 ..	187	212	− 25	371	395	− 24
Nov. 4 ..	197	235	− 38	419	415	+ 4
,, 25 ..	229	203	+ 26	445	406	+ 39
Dec. 16 ..	210	243	− 33	398	496	− 98
Jan. 6 ..	354	276	+ 78	644	627	+ 17
,, 27 ..	449	285	+ 164	919	636	+ 283
Feb. 17 ..	407	260	+ 147	818	569	+ 249
March 9 ..	350	340	+ 10	643	596	+ 47
,, 30 ..	250	290	− 40	506	594	− 88

occurred at other ages. This increase can be explained by the epidemic prevalence of influenza which has long been known to be associated with an increased mortality from respiratory tuberculosis.

It is interesting to note that whereas deaths from bronchitis and other respiratory disease and from heart diseases were in considerable excess, pneumonia deaths registered only a small increase on the previous winter, despite the very severe weather conditions.

2. Manual of the International List of Causes of Death (5th revision, 1938). London. 1940. Pp. 36–41.

TABLE VII.—DEATHS AT AGES 65 AND OVER REGISTERED IN LONDON, JULY, 1939, TO MARCH, 1940, WITH COMPARATIVE FIGURES FOR 1938–39 CORRECTED AS IN TABLE I

3-week period ending—	Registered in 1939–40			Expected from 1938–39. Ages 65 and over	Excess or defect in 1939–40
	Ages 65–74	Ages 75 and over	Total, 65 and over		
July 22 ..	563	619	1182	1115	+ 67
August 12	546	586	1132	1214	− 82
Sept. 2 ..	582	615	1197	1066	+ 131
,, 23	467	518	985	1165	− 180
Oct. 14 ..	489	599	1088	1088	—
Nov. 4 ..	561	640	1201	1259	− 58
,, 25 ..	531	627	1158	1266	− 108
Dec. 16 ..	588	582	1170	1345	− 175
Jan. 6 ..	872	983	1855	1768	+ 87
,, 27 ..	1228	1460	2688	2015	+ 673
Feb. 17 ..	1116	1295	2411	2042	+ 369
March 9	963	1200	2163	2136	+ 27
,, 30	699	915	1614	1955	− 341

Adults aged 45 and over

The diagram indicates a large increase in deaths at ages 45–54, 55–64 and 65 and over, commencing from about the end of the year 1939, as in the case of young adults. The upper portion of the diagram has been drawn to a vertical scale only one-fifth of that used in the lower portion, and the significance of any divergence between the 1940 and 1939 curves, as

TABLE E

Deaths at ages 45–64 (*Jan.* 7–*Feb.* 17)

Cause	Deaths 1939–40	Expected numbers from 1938–39	Excess in 1939–40
Tuberculosis of respiratory system	151	112	+ 39
Influenza	95	28	+ 67
Pneumonia	240	176	+ 64
Bronchitis	572	209	+ 363
Other respiratory disease	100	19	+ 81
Heart diseases ..	453	398	+ 55
Violent causes ..	77	52	+ 25
Other causes ..	905	741	+ 164
All causes ..	2593	1735	+ 858

Deaths at ages 65 *and over* (*Jan.* 7–*Feb.* 17)

Cause	Deaths 1939–40	Expected numbers from 1938–39	Excess in 1939–40
Tuberculosis of respiratory system	41	26	+ 15
Influenza	96	93	+ 3
Pneumonia	402	286	+ 116
Bronchitis	982	545	+ 437
Other respiratory disease	86	31	+ 55
Heart diseases ..	1726	1512	+ 214
Violent causes ..	178	120	+ 58
Other causes ..	1588	1444	+ 144
All causes ..	5099	4057	+1042

measured by numbers of deaths, is correspondingly greater. Tables VI and VII give the comparative figures of deaths from all causes at these ages in 3-weekly periods from July, 1939, to March, 1940, as in the previous tables. There was no important change in mortality compared with the previous winter until the severe weather set in, but a very large excess of deaths resulted during the 6 weeks from Jan. 7 to Feb. 17. Analysis according to cause during this 6-week period leads to the above comparisons, the same process of correction being applied for population changes, deaths of non-residents and changes in method of joint-cause classification as at ages 15–44 (table E).

The total excess of deaths in the 6 weeks at ages over 45 amounted to 1900. Respiratory tuberculosis showed an increase similar to that in young adults.

Influenza accounted for 70, pneumonia for 180, bronchitis for 800 and other respiratory disease for 136. The proportionate increase in pneumonia was about 40 per cent., compared with 58 per cent. for influenza and over 100 per cent. for bronchitis and other respiratory disease, and this gives some indication of the effects of the development of sulphapyridine treatment in keeping down pneumonia mortality under very adverse conditions. Heart diseases accounted for an increase of 269 deaths, chiefly at ages 65 and over, this being readily explained by the effects of the severe weather. Violent causes accounted for an increase of 83 and other causes for 308.

TABLE VIII.—DEATHS FROM ROAD TRAFFIC ACCIDENTS, SUICIDE AND OTHER FORMS OF VIOLENCE REGISTERED IN LONDON IN EACH WEEK FROM JULY, 1939, TO MARCH, 1940, COMPARED WITH NUMBERS IN CORRESPONDING WEEKS OF 1938–39 (EXCLUDING DEATHS OF NON-RESIDENTS BEFORE SEPT. 3, 1939, AND EXCLUDING THOSE OF NON-CIVILIANS FROM THAT DATE ONWARDS)

Week ending (1939–40)	Weeks with full moon		Road traffic accident deaths		Suicides		Deaths from other forms of violence (including burns drowning, &c.)	
	1939–40	1938–39	1939–40	1938–39	1939–40	1938–39	1939–40	1938–39
July 8	..	..	3	10	18	12	20	16
,, 15	..	FM	5	5	8	3	15	25
,, 22	..	..	8	12	7	7	19	17
,, 29	..	..	8	6	18	7	11	17
Aug. 5	FM	..	8	7	9	13	17	7
,, 12	..	FM	4	3	2	10	17	10
,, 19	..	..	4	6	12	7	12	13
,, 26	..	..	7	6	21	8	18	15
Sept. 2	FM	..	7	4	8	12	15	12
,, 9	..	FM	14	3	20	13	20	21
,, 16	..	..	17	3	13	14	29	16
,, 23	..	..	17	2	13	12	24	30
,, 30	FM	..	6	2	7	16	14	18
Oct. 7	..	..	10	8	12	10	13	16
,, 14	..	FM	16	11	12	8	20	17
,, 21	..	..	18	7	10	7	24	17
,, 28	FM	..	18	9	6	11	28	19
Nov. 4	..	..	5	11	11	4	15	25
,, 11	..	FM	10	4	8	12	16	15
,, 18	..	..	13	6	4	9	33	19
,, 25	..	..	14	3	6	13	25	13
Dec. 2	FM	..	8	2	7	7	24	17
,, 9	..	FM	25	6	7	10	20	17
,, 16	..	..	16	11	7	15	26	28
,, 23	..	..	22	5	16	10	32	24
,, 30	FM	..	17	5	12	9	37	27
Jan. 6	..	FM	15	9	8	14	39	37
,, 13	..	..	23	9	9	5	48	36
,, 20	..	..	20	6	11	9	24	28
,, 27	FM	..	10	11	10	9	28	23
Feb. 3	..	..	11	9	9	4	33	20
,, 10	..	FM	8	6	15	10	40	27
,, 17	..	..	10	12	9	11	22	32
,, 24	FM	..	4	3	17	9	34	28
Mar. 2	..	..	8	4	12	12	31	16
,, 9	..	FM	12	7	13	6	22	24
,, 16	..	..	8	12	6	9	32	17
,, 23	FM	..	12	4	7	10	24	24
,, 30	..	..	4	4	8	10	19	38

Violent Deaths

A good deal of discussion has taken place with regard to the increase in road traffic deaths in the large towns, attributable to the lighting restrictions consequent upon the war. In table VIII the deaths from road accidents registered in London in each week from July, 1939, to March, 1940, and from suicide and all other forms of violence, are given for comparison with the numbers in the corresponding weeks of 1938–39. The weeks in which the moon was full are indicated by the letters FM. Taking the period from Sept. 3 to Feb. 24 in 1939–40 and from Sept. 4 to March 4 in 1938–39, we may arrange the weeks according to the lunar cycles as follows and total the deaths from road traffic accidents in each group of weeks (table F).

It is evident that under normal conditions of 1938–39 there was no important variation of traffic fatalities in London according to the moon, but under blackout conditions the increase in deaths registered from this cause was least in the weeks when a full moon occurred and most serious in the two weeks preceding.

TABLE F

	No. of weeks	1939–40	1938–39	Excess in 1939–40
Weeks with full moon	6	63	39	+ 24
1 week before ,, ..	6	101	39	+ 62
2 weeks ,, ,, ..	6	93	37	+ 56
3 weeks ,, ,, ..	6	85	44	+ 41
4 weeks ,, ,, ..	1 and 2	5	12	—

The number of suicides in London during the first 25 weeks of the war was 259 compared with 251 in the corresponding weeks of 1938–39. These are crude figures and an approximately corrected total for 1938–39 would be about 230. On the other hand the number of suicides during the 9 weeks before the commencement of war was 103 compared with 79 in the same weeks of the previous year. These figures require no comment.

The last columns of the table show that deaths from all other forms of violence registered in London during the first 25 weeks of the war totalled 668, compared with 570 (or when corrected about 520) in the corresponding weeks of 1938–39.

Summary

1. A comparison is made between mortality at different ages and from various causes in London from July, 1939, to March, 1940, and that in the corresponding weeks of previous years with suitable corrections.

2. A very substantial saving of life at ages under 5 occurred, chiefly accounted for by a remarkable fall in mortality from pneumonia, bronchitis, diarrhœa and whooping-cough, and the failure of a measles epidemic to appear at the expected time. A similar absence of measles has been noted in Manchester and Liverpool.

3. Children of school age did not benefit from school closure and dispersal to the same extent as the children of pre-school age in so far as mortality was concerned. Nevertheless, deaths from diphtheria, measles and whooping-cough declined to very small numbers.

4. Young adults showed a pronounced increase in mortality during the winter period, mainly due to respiratory tuberculosis, bronchitis, respiratory diseases (other than pneumonia) and heart diseases, but their pneumonia deaths did not increase appreciably despite the severe weather.

5. Adults over 45 years of age registered a very substantial increase in mortality during the cold weather of January and February, mainly due to respiratory and heart diseases, but the proportionate increase in pneumonia was much less than that for influenza, bronchitis and other respiratory diseases.

6. The increase in traffic fatalities during the autumn and winter was much greater in moonless weeks than in weeks when the moon was full.

Grateful acknowledgment must be made to Sir Arthur MacNalty, chief medical officer of the Ministry of Health, for his help in the publication of this report, and to many of my colleagues at the General Register Office, who must perforce remain anonymous, for their assistance in preparing the tables and diagram.

On and after Monday, April 29, outpatients are asked to attend the National Hospital for Nervous Diseases, Queen Square, at 1.30 P.M., instead of 9.30 A.M. as at present.

MENTAL ILLNESS AS A CLUE TO NORMALITY

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(*Concluded from p. 680*)

SCHIZOPHRENIA AND PARANOIA

That schizophrenia is regarded by most psychiatrists as so much further from the normal than the affective psychoses is, I think, due to the constitutional mental make-up of the observers. Most psychiatrists, and for that matter most doctors, appear to be practical and efficient rather unimaginative cyclothymes; but to the creative artist the schizophrenic divorce from reality is much more understandable than the bounding energy of the hypomanic. Indeed, as with the other psychoses, the earlier that cases are examined the more indistinct becomes the dividing line from normality. One recalls a schizophrenic scholar who persuaded publishers to issue a textbook on philosophy which to the uninitiated appears obscure profundity but in reality is completely unintelligible nonsense. The schizophrenic will talk of the "wind on the heath" in a way which Borrow's Mr. Petulengro would appreciate, but which is out of place in the outpatient clinic. Given, however, the premise that health is less important than beauty and that doctors are misguided in their efforts to produce health, such conversations are completely reasonable.

The correlation between schizophrenia and the weedy asthenic, athletic, and dysplastic physical types is poor; but pyknic schizophrenics are rare. On the other hand, features of "schizoid" personality are extremely common as precursors of schizophrenia, though many schizoid people never become mentally ill, and a temporary increase in schizoid features about the time of puberty is often seen in persons who later become full-blooded cyclothymes. The features of schizoid personality are well known. The individual is quiet, shy, and retiring, and more interested in abstract speculation and artistic achievement than in practical everyday activities. There is often a tendency to oppose the older generation, to resent advice and control, and to strike out alone into the world on a wagon fixed to an unsubstantial star. According to the intellectual capacity, the main interest may be the radio, religion, abstract theology, art, or philosophy. One envies, at times, the otherworldliness of the schizoid personality in his studies. The schizoid scholar, looking for truth for truth's sake, content in his poverty, forms a contrast with the successful cyclothymic physician, concerned rather with satisfactory therapeutics than molecular pathology. Yet this is happily only a picture of extremes; for, unless the scholar can at times descend from his mountain top to reality and the cyclothyme occasionally indulge in imaginative schizoid vision, each is an incomplete and less valuable personality. Here it is worth while to point out that the predominantly manic-depressive or cyclothymic personality is identical with Jung's extravert type, and the predominantly schizoid with his introvert type.

The early symptoms of schizophrenia may be summarised thus:—

(1) *Thought disorder* is perhaps the most fundamental disturbance. Logical sequences are ignored, and in their place associations based on vague analogy, symbolism, sound, and chance are substituted. At times the thoughts stop suddenly (blocking). At other times incongruous and bizarre ideas spring into the mind as though from nowhere (autochthonous ideas). Sometimes these bizarre ideas are connected with trivial environmental events.

(2) *Affective upsets* are usual. Not only are new and incongruous emotions attached to stimuli, but emotionally charged situations may be met with apathy. The states experienced range from ecstasy and mystic salvation to blank despair, yet even these are seldom constant.

(3) *Ideas of reference and hallucinations* often appear to arise secondarily from autochthonous ideas. A thought springs into the mind. Where did it come from? It was put there. By whom? Someone outside. Why, I actually heard them saying the same thing. So paranoid delusions begin.

Of the advanced schizophrenic features, catatonia calls for comment. This resembles closely the extrapyramidal syndromes seen sometimes in encephalitis lethargica, general paralysis of the insane, and after the administration of bulbocapnine in animals. The resemblance is sufficiently striking to suggest that in all these conditions the same functional upset is present.

I have already tried to show how schizophrenia connects with normality. In his surrealist pictures the artist forewarns us of schizophrenic hallucinations, in his sublimities the poet pictures the state of ecstasy, in his profound religious experiences the mystic experiences schizophrenic affect, and in his disjointed prose the modernist author reproduces schizophrenic disorder of thought. Even the most matter-of-fact may, in the interval between sleeping and waking, know something of schizophrenia—the so-called "hypnagogic" hallucinations. But schizophrenia links itself also with other mental disorders. The transition from paranoid schizophrenia through paraphrenia to paranoia has been mentioned. Pure paranoia, too, occurs in schizoid personalities; in it the delusions are beautifully systematised, and thought disorder, affective upsets, and hallucinations are absent. Whether or no it is a separate disease, it is certainly an individual reaction or attitude to life. Most of us have at some time or other been unjustifiably suspicious. At such times we misinterpret trivialities and suspect our friends of talking of us behind our back. We all know, too, psychopaths who spend years in proclaiming fancied wrongs and in profitless litigation. Such persons merge imperceptibly with those socially valuable people who feel strongly enough about impersonal injustice to do something to defeat it. The schizophrenic and the paranoid ways of life are, I think, sufficiently distinct to justify two separate categories with a spectrum-like transition between. In each a quantitative assessment is possible, though this is less easy than in mania and depression, because these ways of life are further from the everyday experience of most of us.

CONFUSIONAL STATE

The confusional state is characterised by disorientation, irritability, and delirium, with visual hallucinations, perplexed paranoid attitudes, and dulling of consciousness. This picture may have manifold causes—acute toxæmias, such as pneumonia and typhoid, alcoholic and drug intoxications, cerebral syphilis, and arteriosclerosis. Where these symptoms are found, these causes must be looked for. But the confusional state is not a clear-cut entity merging gradually with normality like the other psychoses. It is an acute reaction of perhaps slightly faulty material to severe physical stress. One symptom

only it can claim which is rare in other conditions, and that is disorientation—something quite apart from normal experience. Delirium itself, as Bernard Hart (1936) says, shades imperceptibly into schizophrenia on the one hand and hysteria on the other. It is probably most valuable to regard the confusional state as a violent upset, structurally or physico-chemically determined, of the normal psychic machinery. The epileptic psychosis falls into a somewhat similar category. The egocentricity, vanity, and boasting hint at mania, and the phases of depression and irritability at melancholia. The pedantry has an obsessional smack, and the religiose ostentatiousness and desire to please suggests hysteria. It is, as it were, another hotch-potch of behaviour patterns.

HYSTERIA

Of all the mental illnesses hysteria shows perhaps the most perfect transition between normality and gross disease; for there are few people who have not, at some time or another, exhibited hysterical phenomena. Hysteria is a perfect escape from unpleasant or hopeless reality, but it can also become one of the most powerful driving forces in human behaviour. Hysteria is defined as the unconscious production of symptoms with the object of obtaining a gain. Such a phenomenon appears to occur much more readily in a personality showing certain specific features—the so-called hysterical personality.

The form taken by the symptoms is as varied as human experience. In stupid people anæsthesiæ, paralyses, blindness, and aphonia are usual, though even among the intelligent these are not unknown. Pain, be it headache or backache following an injury or a grossly physical illness, paræsthesiæ, and strange sensations, such as depersonalisation, may be hysterical. Hysterics may produce symptoms of nervous illness—for example, depression, anxiety, hallucinations, or confusion. Most obvious of these is the so-called Ganser syndrome, seen in prisoners desiring preferential treatment, but it is the other mental forms which present the greatest difficulties in differential diagnosis. The difficulties are accentuated by the liability of all mental illness to show at times hysterical features. The diagnosis can as a rule only be made by the complete absence of the more subtle criteria of the psychoses—for example, retardation in depression and blocking in schizophrenia—the clear demonstration of an obvious gain from the illness, and the finding of extreme suggestibility. The gain may be material—cash in a compensation case, home for the shell-shocked soldier—or psychological—attention for the family "ugly duckling," revenge for the abandoned lover, or escape for the disappointed wife or the married homosexual. One recalls a husband, forced by the absence of a doctor to attend at his wife's parturition, who subsequently had a hysterical fugue of about a week's duration, whenever she was again due to be delivered. The question of the unconsciousness of the motive is interesting. The husband mentioned above had spontaneously realised the reason for his fugues. The malingerer in search of a hospital bed for the night appears to differ only in degree from the compensation hysteric collecting his weekly remittance. Indeed, it is at times impossible to say how far hysterical behaviour is deliberately put on, as when a wife switches on a torrent of emotion at her late home-coming husband.

The hysterical personality, and for that matter the patient with hysterical symptoms, is with a great deal of emotional justification apt to be treated as a pariah, as someone for whom the stick is the only cure. Though in practice firmness is the first consideration in the management of hysterical behaviour, the hysteric is as much to be pitied as the melancholic and is as little to blame for her conduct. The features of the hysterical personality are really a generalised extension of the hysterical mechanism of symptom production. In essence they represent an attempt to achieve without the bother of achievement. There is a histrionic emotional display, with a hedonistic desire for immediate gratification. The complete picture may be summarised thus:—

(1) *Selfishness* is complete and absolute, though coupled with frequent explanations that there is no-one more unselfish in the world. The egocentricity is such that every event is referred to the self. She says "I don't like him. He looks at *me* in a funny way. . . . I wonder what she thinks about *me*. . . . Everybody likes me!" There is complete inability to love anyone but the self, and other people are forgotten with the greatest ease whenever convenient. This is exactly analogous to the ease with which a child forgets its parents when parted from them. The supposed misery of children in these circumstances is invariably a projection of parental emotions. The self-importance of the hysteric is never lost for a moment, even when contemplating her own troubles; John Bunyan* plainly showed his hand when he described himself as "the chief of sinners."

(2) *Desire for immediate gratification* is shown without the bother of working for it. The hysteric shows superficial ability and is a brilliant beginner but has no staying power when it comes to the difficult part of anything. Often there is a "scintillating futility and silly smartness" (Mapother). There is no wish to be self-respecting and self-sufficient.

(3) *Exploitation of emotions and helplessness.*—To explain failures and achieve success, in appropriately chosen situations, there are outbursts of apparently uncontrolled emotion; yet, should the situation suddenly change, the emotion is at once put into cold storage. The mother of a hysteric will say: "The strange thing about Ivy is that she only gets her attacks when there are no visitors in the house." The noble virtues seem to have no place in the hysteric's make-up, and instead she adopts a cheap sentimental set of values, clearly reflected in her favourite paper, the *Daily Peepshow*. She will weep over a "poor little doggie," yet a war leaves her unmoved. Though she revels in pseudo-distress, she is completely without shame. She grumbles at trifles and makes mountains out of non-existent emotional molehills. She loves to embroider and exaggerate morbidly the simplest incident. She discriminates imperfectly between truth and falsehood and appears to believe the slanderous and ridiculously improbable tales she tells showing herself in a romantic light (pseudologia fantastica). She craves for notice and sees herself as the heroine of a picturesque autobiography. To gain the limelight she will behave in a ludicrous manner. Her real feelings are as shallow as her emotional expression is extravagant. She enjoys the petting of flirtation and courtship, but when it comes to intercourse she is frigid, and she dislikes the chores and the children in the home. As a mother she is sentimentally loving and so kind that she is painfully cruel. If her first man is lucky enough to escape, he is bombarded by letters with threats of suicide, until she finds a new whipping-stone. Often she will lead a weirdly patterned sex-life, first encouraging men and then scorning them, and occasionally landing herself in such emotional "hot water" that "the worst" happens. In her childish coquettishness she has a definite superficial attractiveness.

(4) *Absence of satisfaction.*—If she attains her ends she is incapable of satisfaction. She must be for ever pressing on in the hope of something better round the corner. In her search her self-love makes her hard and cruel, and those to whom she owes most are often

* Besides his hysterical personality features, Bunyan showed also the characteristics of the ruminating obsessional.

those whom she makes suffer most. Yet her self-love sometimes sets a limit to her activities; and, if she has to risk genuine danger—be it physical (such as a staged suicide) or emotional (such as social opprobrium)—in the pursuit of her aims, she will usually stop; for she is intensely conventional.

(5) *Response to firm treatment.*—She responds to firmness and takes reproof like a child. She will listen to remarks which would make of the ordinary adult an enemy for life, and thank one for them. When up against unassailable reality, her behaviour becomes for a time normal, but at the first sign of weakness she redoubles her efforts and displays once again the astounding toughness of her character.

She is a sad creature, knowing neither true happiness nor true sorrow. In her full-blooded form she represents almost a specific species. Her behaviour can usually be predicted to a nicety. The letters of ten different hysterics read as though they were all written by the same person. It is not surprising that so remarkable a type should have received the attention of the novelist. Mildred in Somerset Maugham's "Of Human Bondage" and Mrs. Dubidat in Shaw's "The Doctor's Dilemma" are perfect pictures, and there are many more.

If the hysteric is endowed with hypomanic driving power and considerable intelligence, the result is often of world-shaking or even world-shattering significance. An emotional vision, with the subject as its centre, a ruthless disregard of reason and other people, and an iron-bound hide are no mean weapons in this world. If we remember that hallucinations may be hysterical and that schizophrenics are not given to practical achievement, the conduct of Joan of Arc is simply explained. Florence Nightingale's astounding efforts in the face of insuperable obstacles are perhaps less astounding, if no less valuable, when it is recalled that she spent the last thirty years of her life in bed with a mysterious malady, and that even the Queen herself had to come to the bedside. The clue to T. E. Lawrence, in his perpetually dissatisfied search for a "way of life," is provided by Bernard Shaw's observation that "he never seemed to have reached full maturity." In our own time we are witnessing perhaps the apotheosis of the hysteric. In his play "Geneva" Bernard Shaw makes Battler burst into tears at the thought of the death of his dog in a world cataclysm. The mystic Aryan myth is but the pseudologia fantastica of a shell-shocked German corporal.

It must in fairness be pointed out that, because a genius shows hysterical emotional abnormalities, it does not necessarily invalidate his or her spiritual, artistic, and material achievements. As James (1902) remarks of Saint Teresa:

> "If her theology can stand these other tests . . . *immediate luminousness*, *philosophical reasonableness*, and *moral helpfulness* . . . it will make no difference how hysterical or nervously off her balance she may have been when she was with us here below."

The same author points out that, although from the point of view of his nervous constitution George Fox was a psychopath or détraqué of the deepest dye, yet "the Quaker religion which he founded is something which it is impossible to overpraise in a day of shams, it was a religion of veracity rooted in spiritual inwardness, and a return to something more like the original gospel truth than men had ever known in England. . . . No one can pretend for a moment that in point of spiritual sagacity and capacity, Fox's mind was unsound."

The strange hysterical psychopath, whether a dictator or a remittance man, seems a far cry from normality; yet a close self-examination may be painfully illuminating. A tincture of hysteria adds an emotional spice to life. A more generous measure converts the sober vicarage daughter into an Emily Brontë. What evidence have we about the cause of this most remarkable facet of human behaviour? As a result of psycho-analytical studies the Freudians postulate as a cause the fixation of the sexual emotions at an infantile level. That such a phenomenon occurs seems on the face of it extremely likely. Children show gross hysterical behaviour far more often than adults, and the whole emotional equipment of the hysteric is remarkably like that of a child. Indeed, the emotional side of "growing up" may almost be described as a "growing out of" hysterical self-love into a mature ability to love others. Each of the famous hysterics mentioned above was unmarried and, so far as we know, unsatisfied. But the difficulty is to explain why this emotional fixation at an infantile level takes place. The Freudians suggest emotional traumata received in childhood, but similar traumata affect normal people. It seems more likely that, although these traumata may determine the form of the symptoms, the ultimate cause is constitutional. Such a view is supported by the hysterical behaviour of animals, in whom infantile emotional traumata are an awkward conception. A recently broken-in colt will sometimes obstinately refuse to leave the stable yard. The treatment is to walk it continuously round the yard with its head facing the wall, so that it can never take a step forward. At the end of two or three hours it will walk out of the yard like a lamb. I have already quoted Mapother and Lewis's observation that hysterical liars had five times as many siblings in mental hospitals as the average population, and the occurrence of psychopathy, mental illness, and hysteria in the same family is a common clinical finding in psychiatric work. Let us suppose that a constitutional hysterical potentiality is present in various amounts in all people. If this is great, the stress and strain of normal family life is enough to excite symptoms. If it is considerable but still sub-threshold, a severe emotional temptation, such as the marriage of a younger sister, an industrial accident, or the frontline under shell fire, will produce symptoms. In this connexion it is interesting to note that psychotherapy would often relieve the symptoms of shell-shock, but that such "cures" were seldom maintained in the face of fresh exposure to active service. If the potentiality is small, only occasional mild hysterical conduct is seen, such as ambitious day-dreaming and the use of emotional means to obtain rational ends. There is some evidence that this potentiality is connected with the endocrine system. In hysterical women not only is frigidity usual, but amenorrhœa, infantile uterus, and a poorly developed vagina are common. The breasts are usually flat, as in the young girl; later they sag but lack substance. One can sometimes identify the hysteric at a distance by her thin lips and thin hips. It would be an interesting research to estimate the sex hormones in a series of hysterics.

OBSESSIONAL STATE

The obsessional state is the last of the eight main types of reaction of the diseased mind. Mild obsessional traits are widespread among the normal population, but the true obsessional disorder is relatively rare. Its features are a subjective compulsion, a resistance to it, a recognition of the senselessness of the compulsion, and some unpleasant mental reaction, such as anxiety, fear, or morbid preoccupation. The compulsion may take a variety of forms. It may be

TYPES OF REACTION

	Mania (M)	Anxiety and depression (D)	Schizophrenia (S)	Paranoia (P)	Hysteria (H)	Obsessional state (O)
			NORMALITY			
Stage 1	Mildly bouncing personality	Justifiable grief and unhappiness	Shy, reserved personality; sometimes artistic, dreamy, and philosophical	Occasional unjustifiable suspicions	The touch of hysteria which is an added attraction	Ordinary neatness
,, 2	Excessively energetic restless type	Tendency to be easily unhappy, worried, and anxious	Surrealist artist and writer	Continually suspicious type	The extra touch which makes life difficult for all around	Extraordinary neatness
			INTERMEDIATE PSYCHOPATHIES			
Stage 3	Mild hypomanic—a social blessing	Anxiety state	Mild schizoid psychopath with queer rites and cults	Suspicions severe enough to lead to absurd litigation	Mild hysterical psychopath—a menace to the family	Obsessions causing worry to their possessor
,, 4	Severe hypomanic—a social curse	Reactive depression	Severe antisocial schizoid psychopath	Litigant crank who parades street with placards, &c.	Severe hysterical psychopath—a menace to society	Obsessions upsetting the conduct of their possessor
			INSANE PSYCHOTICS			
Stage 5	Certifiable manic	True but mild endogenous depression	Hallucinated schizophrenic with gross thought disorder	Mild but certifiable paranoiac	Certifiable hysteric—Hitler type	Obsessions making their possessor socially impossible
,, 6	Gross mania with flight of ideas producing unintelligible speech, &c.	Gross melancholia with delusions of guilt, &c.	Catatonic schizophrenic	Gross and dangerous paranoiac	Gross certifiable hysteric—often somewhat mentally defective also	Bizarre obsessions, often coupled with schizophrenia

nothing more than a tune running in the head, a desire to swear in church, or an impulse to count, touch, or tidy things. If the compulsion is strongly antisocial or repugnant to the individual, an elaborate ritual may be developed to avoid provoking factors. A fear of something provoking an obsessional sequence is a "phobia." Often the whole process may be illuminated by psychopathology. A ritualistic cleansing process both springs from the leads to a fear of dirt, itself symbolic of sexual guilt, often of masturbation. But psycho-analysis or, for that matter, any form of psychotherapy seldom produces a cure. In its severe forms the obsessional disorder leads to endless rumination; the wretched sufferer goes over every possible result, good and bad, of every course of action before making up his mind. Just when he has decided, a fresh doubt springs up, and action is indefinitely postponed. A beautiful picture of the ruminating obsessional has been drawn by Borrow in chapters 64–66 of "Lavengro."

The previous personalities of sufferers from the obsessional disorders are characterised by excessive cleanliness, orderliness, conscientiousness, and precision. Needless repetition occurs. They both think and act in inconclusive ways. They may be irritable, obstinate, and morose or alternatively submissive, vacillating, and uncertain. Should another mental illness develop in such a personality, it will be coloured by obsessional features. Schizophrenia may begin with obsessional ideas which become increasingly bizarre. An obsessional disorder may be the main symptom of a depressive attack. A hysteric in contact with obsessionals may mimic the obsessional disorder, though at times forgetting her elaborate rituals.

The arguments applied to the psychogenic explanations of hysteria apply with equal force to the obsessional state. Once again strong constitutional factors are evident. A third of the parents and a fifth of the siblings of obsessionals show strong obsessional traits (Mapother and Lewis 1937), and in obsessional families schizophrenic and affective illnesses are commoner than the average.

In normal persons a tincture of the meticulous behaviour of the obsessional is common. For society it is a great convenience. The mildly obsessional person keeps himself, his possessions, and his affairs neat and in order. If he is a trifle more strongly flavoured he becomes an admirable librarian, systematic biologist, or editor of an encyclopædia. It is unwise for him to become a dispensing chemist or booking-office clerk, for he will be tortured with doubts about the correctness of his medicines or his change. The German and Japanese nations as a whole show more obsessional features than most. Their neatness and love of classification is combined with an alternate submissiveness and touchy irritability. Their value to humanity as systematic investigators is enormous, but in our dealings with them, as with all obsessional patients, we must remember the advice of Mapother and Lewis (1937): "The physician must aim at getting a patient well by putting an end to this anxiety and struggle." Everyday experience is enough to convince one that the obsessional state is an exaggeration of one aspect of normality.

A PSYCHIATRIC SYNTHESIS

We are now in a position to review the personality as a whole, as revealed by a study of mental illness. We have seen how each group of symptoms represents not something arising de novo but rather an exaggeration or caricature of a facet of normality. We have seen, too, that between normality and gross mental disease there exists series of intermediate types, and the transition from one end of the scale to the other is not in steps or jumps but in a gradual slope. The diagnosis of insanity is then a legal and social one, rather than an exact medical label. A gross hysteric may be and often is rightly certified, while a mild schizophrenic makes a sound social adaptation in the outside world. It follows that, if we are trying to

assess psychiatrically the personality of any person, normal or abnormal, an attempt at quantitative assessment must be made. This was briefly dealt with when mania and hypomania were under consideration. It is not enough to say that someone shows a schizophrenic type of reaction. The degree of the reaction may be mild and within normal limits; moderate and sufficiently abnormal to justify the term "psychopathic"; or severe enough to class its exhibitor as insane or psychotic. In the absence of any exact method of measuring the degree of the reaction the number of stages recognised must be a matter of individual taste. I favour six arbitrary stages, two within normality, two in an intermediate or psychopathic division, and two in the insane or psychotic division. The accompanying table gives an admittedly imperfect attempt to divide the six main types of reaction on this basis. The use of the word "psychopathic" for the intermediate types is open to criticism, inasmuch as I have used it to cover what may be short-term mental reactions besides long-term ones. This departure from conventional usage is made because there is no other word which covers the intermediate group of cases without hinting at speculative ætiology.

It has been shown that in gross mental abnormalities pure single reaction types are by no means the rule. While one reaction usually predominates, features of a second or even a third type can often be found if looked for. Similarly, the more one examines the normal personality, the more does it become apparent that it is not, as it were, a single mental illness in minor key but rather a combination in various proportions of all six behaviour patterns. An honest self-examination will reveal facets of one's character which are easily explained in terms of mild manic, depressive, schizoid, paranoid, hysterical, and obsessional reactions. It seems that the normal mind has these six facets developed in varying degrees. All the evidence suggests that this arrangement is primarily hereditary or constitutional. The environment from birth acts on this background, producing the complicated psycho-pathological pattern which the analysts unearth. The background is the limiting factor. If its balance is satisfactory, no number of emotional traumata will upset it. If its hysterical or depressive facets are hypertrophied, trivial situations will fire off these reactions.

The conception of the personality as a structure with six facets calls for an alteration in psychiatric diagnoses. An attempt should be made in every patient to assess the degree of each facet present. The result may well be referred to as a "personality picture." The personality picture of a depressed patient might read thus:

		Designation from table
Primary reaction:	True endogenous depression	D 5
Secondary reaction:	Obvious hysterical features	H 3
	Very suspicious	P 2
Degree of other reactions:	Normally a bouncing personality	M 1
	No schizoid features ..	S —
	Ordinarily neat	O 1

A hypothetical normal individual might have a personality picture of this kind:—

	Designation from table
Excessively energetic restless type	M 2
Does not show more than justifiable grief	D 1
No schizoid features	S —
Occasional unjustifiable suspicions	P 1
Enough of the hysteric to be a nuisance at times ..	H 1–2
Ordinarily neat	O 1

And so one can go on. The personality picture, if conscientiously constructed, will not only give a fair indication of how the subject will act in given circumstances, but will also indicate the limits beyond which one cannot hope to produce personality changes by environmental changes.

AN ÆTIOLOGICAL SPECULATION

For brevity and simplicity, let each of the six facets of the personality be designed by a letter—M, D, S, P, H, and O. Each of these is both qualitative and quantitative. Further, the quantitative increase in each is gradual and not in a series of steps or stages (although an arbitrary grading has been suggested). The evidence about what determines the amount of each facet present may be summarised thus:—

(1) In all cases constitution or heredity is most important. The endowment from the parental germ plasm sets a limit in each to the increase or decrease which environment can produce.

(2) Accentuation may be produced by physical disorders of the brain. In general paralysis of the insane M behaviour and D behaviour are common. D behaviour is often a feature of cerebral arteriosclerosis. In the extrapyramidal syndrome of encephalitis lethargica catatonic S behaviour is seen.

(3) The administration of certain chemical substances will lead to great increases in some of the facets. It has already been shown that alcohol and benzedrine reproduce severe M reactions. Similarly, bromides will produce D reactions, though confusion is seen if the administration continues too long. The characteristic hallucinations of S reactions may be experienced as a result of taking mescaline. With mescaline, too, temporary P reactions are not unusual. Further, bulbocapnine will reproduce catatonic S states.

(4) Characteristic H behaviour is often associated with evidence of endocrine upset.

It seems, then, not unreasonable to suppose that the degree of M, D, S, P, H, and O behaviour is biochemically determined. As a speculation, one might suggest that each is quantitatively associated with a specific biochemical substance; that the initial levels of these are determined by the genetic equipment of the individual; and that transient or permanent increases may be brought about by emotionally charged situations, structural damage to the brain, or the administration of certain drugs. If this is true, the solution of the problems of personality is ultimately in the hands of the biochemist.

FORTY YEARS BACK

It is usual to open a paper with a quotation and close it with a summary. I have reversed this order. Before Freud and his many followers began their expeditions into the unconscious, psychiatry had reached a point not far distant from where we find ourselves to-day. For nearly forty years the analysts have been ploughing a single furrow, admittedly with great profit, but they have neglected the rest of the arable spaces of the mind. They have perhaps failed to see that objective observation of mental illness, without speculation or argument by analogy, provides a host of valuable clues to the normal personality. Now the wheel has swung full circle, and we find ourselves echoing the words of James (1902):—

"Insane conditions have this advantage, that they isolate special factors of the mental life, and enable us to inspect them unmasked by their more usual surroundings. They play the part in mental anatomy which the scalpel and the microscope play in the anatomy of the body."

References at foot of opposite page

VITAMINS AS A SUPPLEMENT TO SANOCRYSIN IN ARTHRITIS

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I have previously pointed out the importance of using large doses of vitamins A, B, and C as a supplement to treatment with Sanocrysin (Secher 1938). Their employment was based on the facts that many of the reactions brought about by treatment with sanocrysin are similar to those due to a deficiency of vitamins, and that the diet of the general population is often deficient in vitamins, and on the working theory that the symptoms were caused by the toxins liberated. Subsequent investigation and experiment have confirmed this view.

The treatment is particularly effective in thrombopenia and dermatitis. Thrombopenia, or any fairly pronounced decrease in the number of thrombocytes, has not been observed since the introduction of the treatment. The following figures are taken from a series of cases of articular rheumatism after the administration of 25 + 35 + 50 + 65 + 75 eg. of sanocrysin to each patient :—

Patient	Thrombocytes	Patient	Thrombocytes
Case 449 ..	452,000	Case 453 ..	359,000
,, 450 ..	455,000	,, 454 ..	397,000
,, 451 ..	316,000	,, 455 ..	494,000
,, 452 ..	209,000		

As can be seen, there is no case with a low value. These doses were succeeded by one or two administrations of 1 g. of sanocrysin. This considerable dosage improved the results of the treatment of arthritis still more. Erythema disappeared almost entirely with this treatment, only a few slight cases being observed. If erythema still appears in spite of this dosage of vitamins, a further 200 mg. of ascorbic acid should be administered for the sake of safety. This will stop the erythema.

ASCORBIC ACID IN THE BLOOD

Confirmation of the value of the treatment and an explanation of it are now provided by the quantitative determination of the ascorbic acid in the blood, a method of investigation which had not been elaborated sufficiently when the vitamin treatment was introduced. We employed the method of Farmer and Abt, which is undoubtedly the best. In confirmation of the investigations of others, we found that patients with rheumatic arthritis generally had no ascorbic acid in the blood. Similar conditions are found in tuberculous patients, but often with somewhat higher values, which provides a reasonable explanation of the fact that these patients tolerate the treatment better. On the other hand, little or no ascorbic acid is found in patients with very different diseases; in future this must be taken into consideration.

After all, it is not so remarkable that exhausting treatments can produce the serious toxic effects described previously. All these patients have been treated the world over in ignorance of the fact that their decreased powers of resistance might be explained in this way. But this also shows how wrong it is to blame a preparation for certain reactions. We find now that with this treatment the quantity of ascorbic acid in the blood is increased during the treatment. Case 463 in my material can be quoted as a typical example. She had been ill for eighteen months with pains in the fingers, from which they spread to the joints of the wrist, elbow, toe, and left knee. The results of treatment are given in the accompanying table.

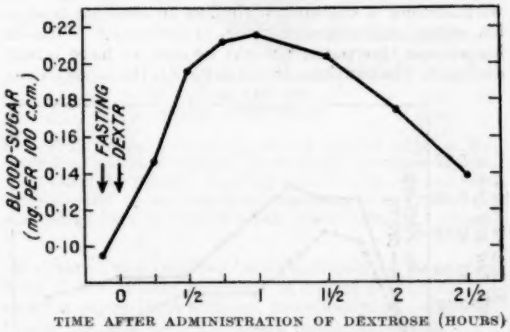

Fig. 1—Blood-sugar curve after administration of 77 g. of dextrose to a patient, aged 45, with abscess of the lung and no ascorbic acid in his serum.

EFFECTS OF TREATMENT WITH SANOCRYSIN AND VITAMINS

S.-R. = Sedimentation-rate. D.S. = Dose of sanocrysin (eg.). A.A.B. = Ascorbic acid in blood (mg. per 100 c.cm.).

Date	S.-R.	D.S.	A.A.B.	Date	S.-R.	D.S.	A.A.B.
Aug. 25	67	—	0·00	Sept. 28	—	65	0·84
Sept. 1	—	25	0·88	Oct. 5	—	75	1·00
,, 6	—	35	0·40	,, 9	40*	—	—
,, 12	—	50	1·60	,, 11	—	100	0·94
,, 21	—	50	0·72	,, 17	30	—	—

* Thrombocytes 234,000

The quantity of ascorbic acid in the blood is greatly increased, and there are no untoward reactions. This case is only one example of many.

Experimental work supports the conclusions reached through clinical experience. Thus, Szent-Györgyi (1937) demonstrated increased resistance in mice to infection with rising ascorbic-acid values; Widenbauer and Saretz (1936) described the antitoxic action of ascorbic-acid in diphtheria; and Bruno (1938) showed that injections of tuberculin caused shock in tuberculous guineapigs on a diet deficient in vitamins. All this confirms my theory that in gold treatment we are dealing with reactions that are due not to metallic poisoning but to toxins liberated.

CARBOHYDRATE METABOLISM

Deficiency of ascorbic acid also throws light on the carbohydrate metabolism in these cases. Pemberton (1935) has shown that abnormal blood-sugar curves

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are found in arthritis and indicate a decreased tolerance of sugar, which increases when the patients improve. A re-examination of Pemberton's investigations has fully confirmed his results. If the blood-sugar curves of arthritic patients are unaccompanied by further information they must be interpreted as a sign of diabetes; but I have found these curves in other diseases also, which had only one feature in common with arthritis: no ascorbic acid in their blood. Fig. 1 is the blood-sugar curve of a patient, aged 45, with abscess of the lung. He had no ascorbic acid in his serum and was given 77 g. of dextrose. Without his abscess this patient might be said to have latent diabetes. The continuous line in fig. 2 is the blood-sugar

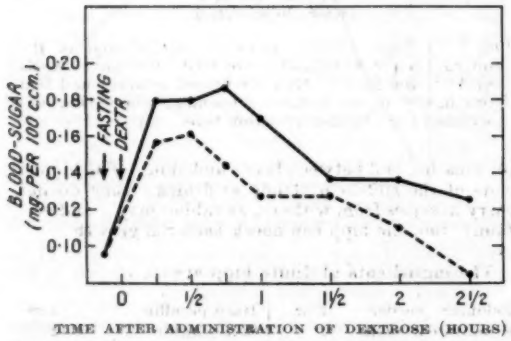

FIG. 2—Blood-sugar curve after administration of 77 g. of dextrose to a patient with pleurisy: continuous line, no ascorbic acid in the blood, Sept. 16; interrupted line, 0·72 mg. of ascorbic acid per 100 c.cm. of blood, Oct. 19.

curve, after a similar dose of dextrose, of a patient with pleurisy and no ascorbic acid in his serum. The interrupted line is the blood-sugar curve of the same patient a month or so later, when the ascorbic acid had risen to 0·72 mg. per 100 c.cm. It thus appears that a condition typical of latent diabetes is produced in the blood-sugar curve when there is no ascorbic acid in the blood; but that, if the quantity of ascorbic acid is increased to a normal value, the curve becomes normal.

CONCLUSIONS

It may therefore be assumed that the cause of the abnormal blood-sugar curves described by Pemberton (1935) is a deficiency of ascorbic acid, and it is on this deficiency that the shape of the curves depends. But, since ascorbic acid is an important factor in resistance to infection, it can be assumed that decreased tolerance of carbohydrates is also important. This is a further reason for giving the vitamin treatment. The importance of vitamin C in treatment with sanocrysin has probably been established through these investigations. We have hitherto been able to determine only ascorbic acid in clinical practice. The importance of the other vitamins cannot be finally decided until quantitative determinations have been carried out.

SUMMARY

(1) The importance of the administration of vitamins during treatment with sanocrysin is confirmed as regards thrombopenia and skin reactions, in which ascorbic acid acts beneficially.

(2) Decreased tolerance of carbohydrates can be abolished in many infectious diseases by increasing the amount of ascorbic acid in the blood.

References at foot of next column

A POSTURE FOR THIGH AMPUTATION

WITH A NOTE ON SEPSIS

BY ARNOLD K. HENRY, M.B. Dubl., M.Ch. (Hon.) Cairo, F.R.C.S.I.

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CUSTOM, "who all sense doth eat," has reconciled us to the supine posture for patients during amputation through the thigh. A nurse must then bear the weight of heavy limbs, or else they hang from raised supports; in either case the surgeon operates at awkward levels, inconvenient especially for blocking peripheral nerves when spinal anæsthetics are unsuitable.[1] These troubles disappear when patients are put to lie on the sound side. Then, if the condemned limb will flex, the nurse need never lift the foot off the table but only grasp the leg and use the heel for pivot (fig. 1). In this way she presents each side of the patient's thigh in turn; the knee falling by its own weight across its fellow will give full access to the back of the limb (fig. 2). There, after infiltrating areas of flap or cuff and chosen lines of incision with a ½ per cent. solution of procaine, the surgeon can in comfort expose and block the sciatic trunk; at the same time he can ligate main vessels and so dispense with tourniquets.

Supplementary incision.—For this twin purpose I make a long mesial incision—first outlined by raising a weal—through popliteal skin, from a hand-breadth below the knee to a point three finger-breadths proximal to the line of bone section (fig. 2). This upward extension of a more distal exposure, due to Fiolle and Delmas, depends first on separating the two heads of gastrocnemius opposite the knee after lengthwise division of deep fascia. The finger then works proximally through the popliteal space and helps to part the slight adhesion of medial and lateral hamstring bellies; it serves, too, in tracing the tibial (or internal popliteal) nerve up to the sciatic trunk, which is now injected with 15 c.cm. of a 2 per cent. solution of procaine—first in the sheath, then in the whole thickness of the trunk.

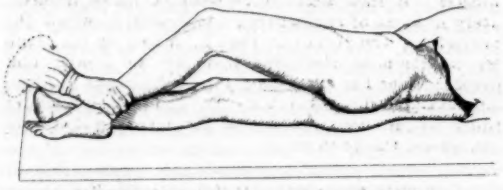

FIG. 1—The flexed limb pivots on the heel, which rests on the table. The nurse holds the leg and rotates it to present the front and sides of the patient's thigh to the surgeon without lifting the limb.

1. Procaine block, used alone or in company with gas-oxygen or minimal quantities of ether, was strikingly employed by Dr. Lofty Abdelsamie in my surgical unit at Kasr el Aini Hospital, Cairo, during work that greatly reduced mortality from crush accidents. Abdelsamie's valuable paper should have new currency at this time of intentional trauma.

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Ligation of femoral vein and artery.—Opportunity is taken of tying the two main vessels. These lie ventral to the sciatic nerve, nearer the bone; and though the femoral artery and vein do not reach the popliteal space officially till they have passed down through the opening in the adductor magnus muscle, yet, as they near this opening, only thin tissue screens them from the posterior compartment. Tracing the vessels, therefore, from below, where one can hook them blindfold off the femur with a finger (fig. 3), it is extremely simple to tie them proximally to the level of bone section.

The *rest of the operation* is now pursued. Incisions of skin run forwards and distally from the mesial cut, and flaps are made and muscles severed according to predilection. The sciatic trunk is left undivided till the time comes to remove the limb. Ten good minutes should elapse between injecting and cutting that large conduit of shock impulse. The method used for trying to burke its later growth will have determined the length of nerve originally injected. I do not venture to say which method is best; no-one knows for certain, but each can distribute the procaine to suit his own convictions. It is at least important, after removing the limb, not to pull out the proximal end of the nerve and cut it short at a point unprotected by procaine, though I have seen this done.

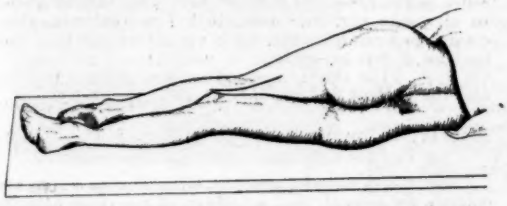

FIG. 2—The knee falling across its sound fellow gives access to the back of the thigh. A long mesial incision exposes the sciatic nerve for high injection and the main vessels for ligature.

There is also the saphenous nerve to deal with. The guide to it is a whitish raphe on the medial side of the thigh—seen on displacing the sartorius—which marks the tendon of the adductor magnus muscle. A nick with Mayo scissors made immediately in front of this will open the canal in which the nerve lies; the nerve can then be traced up the thigh for injection at the same level as the sciatic and divided after the same long interval. I can confirm Abdelsamie's finding (1936):[2] "Amputation under full Novocain analgesia is a benign measure that does not shock the patient."

SEPSIS FOLLOWING THIGH AMPUTATION

I have seen many of these amputations performed with careful technique after scrupulous preparation, but I have also seen, and had myself, too many septic results—perhaps because bacteria from distal foci were travelling up lymphatics during the operation, out of range of chemicals applied only to skin. In my experience sepsis came whether drains were left a long or a short time; if long left they seemed to determine infection; but dangerous pooling of exudate ensued upon early removal. This pooling is prevented by placing ribbon gauze heavily coated with dilute bipp as a loose pack under each layer at the time of suture—for example, between bone and fascia

2. Abdelsamie, L. (1936) *Lancet*, 1, 187.

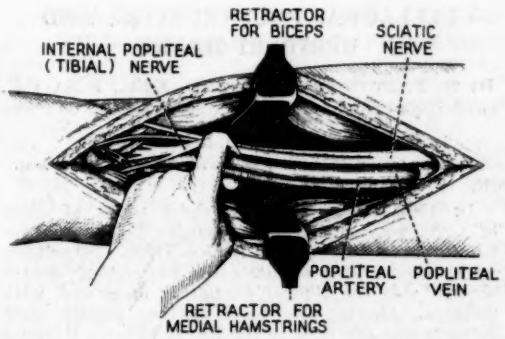

FIG. 3—A finger introduced at the medial edge of the internal popliteal (tibial) nerve hooks the main vessels up from the femur; they are traced upwards and tied proximally to the adductor opening, where they are screened from behind by a thin layer only.

(or muscle), and between fascia and skin. The bipped ends of the ribbon protrude as drains; they do not carry in sepsis from without, as rubber may; and certainly, too, the bipp can check bacterial growth.

The ingredients of dilute bipp are:—

Iodoform powder ..	2 oz.	Hard paraffin	2 oz.
Bismuth carbonate	1 „	Soft paraffin	12 „

Its preparation requires careful attention to details, of which Mr. R. Atkinson Stoney, of Dublin, has sent me the following note:—

Put the iodoform and bismuth in a large mortar and mix well. Melt the hard and soft paraffin together on a water bath; stir well and cool slowly, stirring all the time. Take a little of the mixture of hard and soft paraffin and rub it up with the mixture of iodoform and bismuth till a smooth paste forms. Add the rest of the paraffin little by little to make a uniform ointment. The bipp should have the consistence of firm butter and should not be greasy. In very hot weather increase the quantity of hard paraffin and reduce the soft.

A relevant example of its use in another field interested some of my co-workers at the British Postgraduate Medical School. The large cavity left by removing a mandibular osteoclastoma was packed with bipped ribbon after thorough treatment of the wall with the high-frequency current. The cavity communicated not only with the surface of the neck but also with the mouth, and the patient ate and drank as usual from the day following operation. When we removed the pack for the first time at the end of a fortnight we found a lining of clean red granulations. The pack—except on its oral surface, where saliva had washed out some of the bipp—was unaltered and fresh like the cavity.

I have no experience of the original bipp, which might be toxic in this quantity, having never used any but the dilute variety, whose value I learnt during the last war by watching the remarkable work of Mr. Stoney. I have not met with any other preparation which could so triumph in the test just described.

My thanks are due to Miss F. M. Collinson for the illustrations.

PELLAGRA, POLYNEURITIS, AND BERIBERI HEART

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R. S. Allison, M.D. Belf., F.R.C.P.
PHYSICIAN WITH CHARGE OF OUTPATIENTS AT THE HOSPITAL

In 1933 we published a short series of cases of toxic polyneuritis with changes in the electrocardiogram (Campbell and Allison 1933). Since then we have seen a few similar cases, but recently a case showed also the typical dermatitis associated with pellagra. Shortly afterwards another patient with pellagra was admitted to the Royal Victoria Hospital by Dr. I. H. McCaw, but with no symptoms of polyneuritis and no abnormalities in the electrocardiogram. These two cases are reported partly on account of their rarity in ordinary civil life and to illustrate the variety of symptom complexes which may develop as the result of a deficiency of vitamin B.

POLYNEURITIS, CHANGES IN THE ELECTROCARDIOGRAM, AND DERMATITIS

Case 1.—A male iron-sorter in the shipyard, aged 31, was admitted to the Royal Victoria Hospital on May 6, 1939. He was single and lived with his parents and three sisters in a comfortable home. He had had no serious previous illnesses and was quite well till ten days before admission, when he noticed that the back of his hands were swollen and dark brown (fig. 1). His face and neck also became pigmented. Five days later the legs became swollen. From the onset of symptoms he had difficulty in walking and was unable to work. This difficulty increased rapidly, and on admission he could scarcely lift his legs off the bed. There was no dyspnœa, possibly owing to his inability to take any exercise. Sensory symptoms were slight, and he had no pain in the calves or numbness in the hands or feet.

On examination his general condition was good with no evidence of anæmia or undernutrition. His face, neck, and hands were typical of pellagra. He had a few carious teeth, tongue moist and clean, and throat healthy. The liver was slightly enlarged, but the spleen was normal. The heart showed no enlargement, the sounds were normal, and the blood-pressure was 150/80 mm. Hg. The legs were œdematous. The knee-jerks were sluggish, and the ankle-jerks could not be obtained. There were no definite sensory changes. A test-meal showed no free hydrochloric acid, and there was a low total acidity. The cerebrospinal fluid had a pressure of 120, the protein content was 0·04 per cent., and there was no increase in cells or in globulin. The Wassermann reaction was negative. A catheter specimen of urine was sterile and free from albumin and sugar.

No evidence of any dietary defect could be found. The patient's appetite had always been good, and his average daily diet was as follows:—

Breakfast: boiled egg, wheaten bread, 2 slices of white bread, 2 cups of tea, butter and jam.
Dinner: soup, sausages or stew, potatoes, green vegetables.
Evening meal: similar to breakfast.
He also ate bananas, oranges, apples, and other fruits.

After admission to the ward he was given daily Bemax by mouth and injections of vitamin B_1. The condition rapidly improved, and on May 9 the skin on the back of the hands, the face, and the neck had begun to desquamate. The œdema of the legs was less, and he could lift his limbs off the bed. On the 12th—i.e., six days after admission—the œdema had completely gone, and movements of the legs were almost normal. Desquamation was complete on the 16th and he made a rapid recovery. He was discharged on June 1.

Electrocardiograms were taken on several occasions. The first (fig 2), taken two days after admission, showed inversion of the T wave in leads II and III and slight inversion in lead I. These changes became more distinct, and on May 22 the T wave was inverted in all leads (fig. 3). On June 2, the day after his discharge from hospital, the T wave was still inverted in lead I but iso-electric in leads II and III (fig. 4). On July 3 the electrocardiogram was normal (fig. 5), and the patient had resumed work in the shipyard.

DERMATITIS OF PELLAGRA WITHOUT POLYNEURITIS OR CHANGES IN THE ELECTROCARDIOGRAM

Case 2.—A female, aged 56, who lived in a country cottage by herself, had a history of previous attacks of bronchitis but no serious illnesses. In June, 1939, her legs became bright red and itchy. This condition disappeared in a few hours, but next day a rash appeared on the extensor surfaces of the arms and legs. Four weeks before admission to hospital the back of the hands, the face, and the neck became dull red and later dark brown. There was diarrhœa for five weeks. The appetite was poor, and for many months the patient had been living on tea and white bread.

On admission she had the typical pellagrous rash on the hands, wrists, face, and neck. She was thin and wasted but showed no œdema and no changes in the nervous system. The blood-pressure was 110/70.

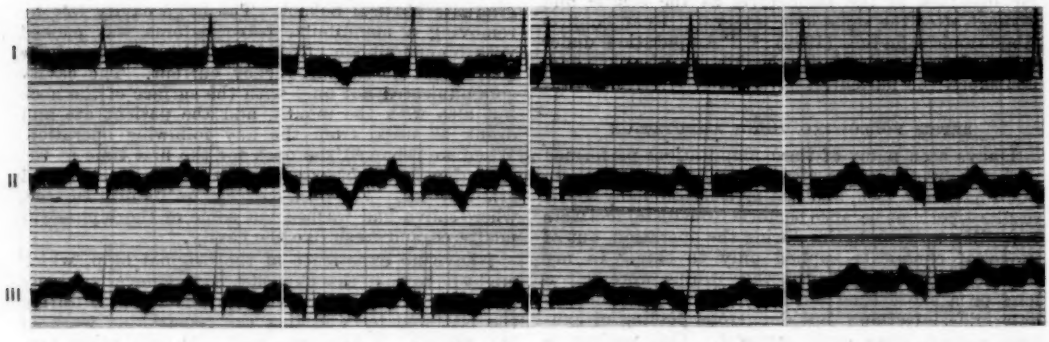

Fig. 2—Case 1: inversion of T wave in all leads (slight in lead III), 8.v.39.
Fig. 3—Case 1: inversion of T wave more distinct in all leads, 22.v.39.
Fig. 4—Case 1: inversion of T wave in lead I only, 2.vi.39.
Fig. 5—Case 1: electrocardiogram normal, 3.vii.39.

A test-meal showed no free hydrochloric acid. The patient rapidly improved after treatment with bemax and nicotinic acid, gained 11 lb. in four weeks, and completely lost the rash.

DISCUSSION

Davies and McGregor (1939), in their review of pellagra in Great Britain since 1934, show that some of the cases were secondary pellagra due to deficient absorption rather than to deficient intake of vitamin-B_2 complex. This point seems to be borne out in our two cases. In the second case there is a clear history of deficient intake, which may also have been aggravated by defective absorption as a result of the achlorhydria and diarrhœa. By contrast, the other patient was accustomed to an average full diet, and there was no obvious deficiency. It seems likely, in this instance, that something must have interfered temporarily with the process of normal absorption. No clue was found to its nature. The patient had had no gastro-intestinal upset, there was no history of alcoholic excess, and, though the temperature was not recorded until he came into hospital (when it was normal), there was no definite evidence of previous fever or of intercurrent infection.

FIG. 1—Case 1, showing swelling and pigmentation of hands.

A further point of interest in this first case is that the clinical picture points to combined deficiency of both vitamin B_1 and vitamin B_2 complex. Though pellagra dermatitis, polyneuritis, and œdema with cardiac involvement have been seen, this is the first case we have met which presented simultaneously the features of both types of deficiency.

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CRIPPLES IN WAR-TIME.—As the able-bodied are called up for service in the fighting forces the possibilities of employment for the less able-bodied increase. In the annual report of the Central Council for the Care of Cripples it is stated that the war has already extended the possibilities of employment for the handicapped, especially for those trained in light engineering and similar processes. It is therefore unfortunate that several training colleges should have had to close their doors for a time, and the council has set up a small subcommittee to consider the whole question of training and rehabilitation in relation to war needs.

TREATMENT OF VARICOSE ULCERS WITH HISTAMINE IONTOPHORESIS

BY S. V. GOULD-HURST, M.R.C.S.
PHYSICIAN IN CHARGE OF THE PHYSIOTHERAPY DEPARTMENT, SUTTON AND CHEAM HOSPITAL

I HAVE had intractable varicose ulcers referred to me lately for treatment with histamine iontophoresis, and the success that has followed prompts me to record details of the method used. My experience with this substance has far surpassed in constancy of results any other form of treatment that I have tried, including tight binding of the whole foot, ulcer, and leg, both with and without the previous application of strong erythema doses of ultraviolet light, and with and without concomitant injection of the neighbouring varicose veins. In several cases binding with elastoplast caused intense itching and either a pustular or eczematous condition of the skin which took a long time to clear.

Some of the patients who have come under my care have given histories of many years of ulceration. One said that she had never been free from an ulcer for thirty years, another twelve years, several for seven years, and others for three to five years. Most of the patients were obese multiparous working women with varicose veins in both lower limbs. The few men, in contrast, were of the sparse type. Some of the ulcers had varied in size over the periods mentioned, and in those patients with two or three smaller ulcers besides the main ulcer certain treatments had temporarily healed the smaller ulcers, which, however, reappeared almost immediately the treatment was stopped. The main or single ulcer varied in size from that of a half-crown to $3\frac{1}{2} \times 4\frac{1}{2}$ in. The depths of the ulcers also varied greatly, some being just below the level of the skin, and one of many years standing having a maximal depth of approximately 4 mm. In this last case the whole of the outer side of the patient's leg, from 3 in. below the head of the fibula to the external malleolus, had at one time or another been ulcerated. His Wassermann reaction was negative.

One of the advantages that histamine has over other forms of treatment is that the skin over the resultant healed area is less thin and papery than that formed if other methods are employed and so is less likely to crack and break down again.

METHOD

I use the British Drug Houses preparation of histamine containing 2 per cent. of histamine acid phosphate. The method of application is as follows:—

A ring of skin $\frac{1}{4}$ in. wide surrounding the ulcer is cleaned with spirit, and a thin layer of the histamine ointment is spread over half of this, the second half being reserved for the next treatment, because the skin so treated is apt to become a little sensitive. Care is taken at the first treatment not to allow the ointment to "spill over" on to the raw surface of the ulcer, because the rapid absorption of the histamine from a raw surface causes unpleasant symptoms—e.g., flushing of the face, throbbing in the head, headache, palpitation, and even a feeling of faintness. So far I have only met one patient who could not, or perhaps would not, continue treatment because of unpleasant effects.

The semicircle of ointment having been applied, a pad of gauze soaked in warm saline solution is placed over it. The positive terminal of a galvanic battery is bound on to this pad, and the negative electrode is applied to some convenient adjacent area. A constant current of 4–6 mA is slowly turned on, when

most patients will say that they are conscious of a pricking sensation under the pad. This current is allowed to pass either for five minutes or until the patient complains of headache or other discomfort before the 5 minutes has passed.

At subsequent sittings both the amount of current passed and the time of the treatment are increased, but never pushed beyond a point of moderate headache. Head throbbing and flushing are generally pronounced, but the patient soon becomes used to this. I have tried it out on myself, so that I should know exactly what they are feeling, and it is only the first experience of it that is strange. These sensations should be explained to the patient before the current is applied on the first occasion. A current of 10 mA for twelve minutes is about the average application that can be received with only the mildest discomfort, but people vary considerably in their tolerance. After each treatment the patient rests for fifteen minutes. Treatments are given twice weekly. A dressing of sterile vaseline or of cod-liver oil is then applied and the wound covered with gauze and firmly bound over a thin layer of wool.

RESULTS

After two or three such treatments the edge of the skin round the ulcer takes on a fresh pink appearance, and the ulcer begins to heal from without inwards. The skin of the leg in the immediate vicinity also becomes less brittle. Pain, which in some cases was continuous, rapidly diminishes until, after the fourth treatment, it has generally disappeared altogether. While the ulcer continues steadily to heal, the general outlook of the patient greatly improves, for undoubtedly the sight, and in some cases also the smell, of a raw ulcerated area, which refuses to heal, is very depressing and disabling. In two cases I found that healing proceeded normally until only a small ulcer about ¼ in. in diameter remained. This refused to heal until the histamine was spread over the raw area itself. The patients were warned that they would get all the uncomfortable symptoms (with which by now they were familiar) in their full intensity within some forty seconds of the application. They became used to this and made no complaint when it was continued. This method is not, however, usually suitable for the larger areas; but I am using it now on a patient whose ulcer, measuring 3 × 4 in., has proved more stubborn than usual owing to the fact that, at one time or another, most of his leg has been ulcerated, and consequently the blood-supply to this region is poor. This method brought about instantaneous improvement. When these ulcers were finally healed, I often gave half a dozen applications of mild erythema doses of ultraviolet rays to the affected limb, including with the newly healed surface an area of surrounding skin. Now, however, I do this once a week during the treatment with histamine and am certain that it has also speeded up the healing and left a still more supple cutaneous surface.

The results have been uniformly successful, and the treatment seems to bring a sense of general well-being, unless it is pushed too hard. The average time taken for the ulcers to heal has been eight to twelve weeks, and these were ulcers of very long standing which had refused to heal with other methods of treatment. So far there has been no relapse, but this will no doubt happen in some cases, for the limbs of these people are affected by a much lower degree of trauma than are normal limbs; I anticipate that they will again respond readily to treatment.

SUMMARY

Varicose ulcers which have failed to respond to other recognised methods can be successfully treated by histamine iontophoresis, sometimes assisted by the application of ultraviolet light to the ulcer and surrounding skin.

MEDICAL SOCIETIES

SOCIETY FOR THE STUDY OF INEBRIETY

IN his presidential address to this society on April 9, Dr. W. NORWOOD EAST surveyed the

Medical Problems of Inebriety

He quoted a passage from an old papyrus showing that alcoholism was already a problem in the thirteenth century B.C.:

> "Whereas it has been told me that thou hast forsaken books, and devoted thyself to pleasure; that thou goest from tavern to tavern, smelling of beer, at the time of the evening. If beer gets into a man it overcomes his mind. . . . Thou knowest that wine is an abomination, that thou hast taken an oath that thou wouldst not put liquor into thee. Hast thou forgotten thy resolution?"

To come to more modern times he thought that during the lifetime of the older members of this society a great change had come about. From his own experience he could testify that during the opening years of the present century the inebriates who were sent to prison for various offences were more numerous and more difficult to manage than those of today. For a few days after admission they were a danger to themselves, to other prisoners and to the staff, and a source of constant anxiety to all who were concerned with their health and safe custody. Many were restless, excitable, uncertain and unreliable, and had lost all sense of decency, apart from those who were suffering from declared delirium tremens, or were in the initial stages of that disorder. A look, a word, an innocent act of one of the staff or a fellow-prisoner was liable to be misconstrued and inadvertently provoke a storm of violent language and a torrent of vituperation, often accompanied by a dangerous assault and the violent destruction of everything within reach. Even after weeks of deprivation from alcohol some remained vindictive, vicious, hostile and dangerous. Today this class of prisoner was steadily decreasing, for as the older die they are not being replaced by a younger generation.

The Home Office licensing statistics for England and Wales for 1938 show that during the period 1913–38 convictions for drunkenness were reduced from 51·16 to 11·31 per 10,000 of the population. The percentage of women among the convicted persons was reduced from 18·94 to 12·91. The consumption of beer per head of the population declined from 27·86 standard gallons to 14·22 standard gallons, and the consumption of spirits from 69·95 proof gallons to 20·65 proof gallons per 100 of the population. The limitations of statistics in regard to convictions for drunkenness as a measure of the real situation at any time is generally recognised, and there can be no doubt that cases of drunkenness coming before the courts represent a proportion only of the total amount which occurs. But we must also remember, he said, that though consumption is lower the world suffers more from alcohol today than it did formerly, for the progress of science, which has altered the tempo of life, has aggravated its dangers. Better housing, advances in education, the wireless, the cinema, the publication of cheap editions of worth-while books and outdoor forms of recreation

effectively have improved the position among the less well-to-do classes. But, Dr. East considers, the most important factor for them, and for those who have always been able to obtain comforts and recreation according to individual tastes, is a general attitude of disapproval towards insobriety. A drunken person is no longer a good companion but a nuisance.

The harmful effects of immoderate drinking may be increased if the alcohol is adulterated, and during 1938 the number of cases in which charges were proved of drunkenness reported to be due to the drinking of methylated spirit was 973; in 848 cases men and in 125 women were involved. Dr. East said that a select committee was appointed on April 9 of that year by the House of Commons, Belfast, to inquire into the composition, manufacture, consumption and effect of drinking what is commonly known as "Red Biddy" or "Tony Wine." They reported that it was probable that "Tony Wine" was a corruption of the well-known description "Tawny Wine," but they were unable to find any origin for the name "Red Biddy." In 1928–29 the consumption of British wine in Northern Ireland was 191,000 gallons and in 1937 the figure was 415,000 gallons. This newly formed habit of wine-drinking by working-class people in Ireland was attributed to its low price, and the committee was concerned to notice that a great many people of both sexes were beginning to drink these cheap wines who did not perhaps realise that they were powerfully alcoholic. They found no evidence to suggest that these cheap wines were sold in an adulterated state, but they did not doubt that some purchasers themselves adulterated the wine to make its effect more rapid and more potent, although this practice was almost entirely confined to habitual drunkards. Dr. C. S. Thomson, medical superintendent in the office of health of the Public Health Department, Belfast, reported to the committee that he suspected, but had no proof, that there is some adulteration of cheap wines taking place in the houses of poorer people with cheaper forms of eau-de-Cologne or, it may be, methylated spirit. In regard to the former suggestion, the Customs and Excise Department state that iso-propyl alcohol, from which cheap perfumery is manufactured, is not an intoxicant as ethyl alcohol (spirits) is, and such perfumery is therefore unlikely to commend itself to seekers after intoxicating drink. Industrial methylated spirit may only be used in the manufacture of perfumery subject to the addition of prescribed further denaturants which they consider sufficient to prevent the drinking of perfumery by any normal person.

It is often said that inebriety is a disease, but it may be no more than a symptom of an underlying mental disease, and Dr. East pointed out that when inebriety or drug addiction appears to be an indication of a faulty temperament, or a defect of character, we may become involved in making distinctions between normality and abnormality, which are sometimes ill-defined and in danger of being appraised by personal preconceptions instead of detached scientific judgments. On the other hand, to regard inebriety or drug addiction as a vice fails to explain the cause of the condition or to promote the cure of the patient, whilst it encourages him to rebut the realities of life by raising a defensive barrier against them. By the Matrimonial Causes Act 1937 a marriage shall be voidable on the ground "that either party to the marriage was, at the time of the marriage, of unsound mind, or a mental defective within the meaning of the Mental Deficiency Acts 1913 to 1937, or subject to recurrent fits of insanity or epilepsy." Dr. East went on to indicate some of the difficulties that may arise in a court of law when supporting the view that repeated bouts of drinking in the past are indications of recurrent fits of insanity or epilepsy. He defined the inebriate or confirmed drug addict as a person with insight who is unable on account of disease, disposition or habituation to forgo the drug of addiction or maintain a reduction of its intake to an innocuous amount, but for practical purposes he thought this definition probably too narrow. If the compulsory detention of an addict was permissible in law and contemplated, it might be necessary to show that whether his addiction had, or had not, resulted in any criminal act it was producing injury to himself, his dependants or society.

As yet, Dr. East observes no general pressure of public opinion for the compulsory control of the drug addict or drunken spouse, and he considers that legislative measures aimed at this objective would be unlikely to be successful.

REVIEWS OF BOOKS

War and the Doctor

Edited by J. M. MACKINTOSH, M.D., D.P.H., chief medical officer, Department of Health for Scotland. Edinburgh: Oliver and Boyd. 1940. Pp. 127. 5s.

DURING the last two years, in fact since it became clear that another European conflict was imminent, a number of books on war surgery addressed to varying audiences have appeared. This one is the product of the Edinburgh school, and the outcome of a series of lectures delivered under the auspices of the Edinburgh branch of the B.M.A. Though it is in the form of eight separate addresses by seven teachers, it covers the whole subject of war surgery very adequately and with unrivalled authority. The wise counsel and helpful advice that have been put into thirteen pages by Henry Wade could only have been marshalled by one of the best clinical teachers of our time, and the reader might well make this, the last chapter, his introduction to the book and the subject. The principles of débridement are clearly set out by Walter Mercer. His chapters, which include the upper limb and chest injuries, and those on facial wounds by J. J. M. Shaw should be read by every surgeon, however experienced, who may be called on to do war surgery, not least by those who did the work themselves in the last war and will all the more appreciate the soundness of the advice. Mercer and W. A. Cochrane, who writes on lower-limb casualties, are both surgeons with orthopædic leanings and therefore plaster-minded, but Cochrane's statement that "The influence of Böhler has been paramount in this matter for the last twenty years, and it is his methods which are acclaimed in modern war" is hardly accurate. Cochrane missed the Franco-Prussian war, where the surgeons were hard at work putting on plasters under the direction of Ollier, but if he had been with the 2nd French Army at Verdun he would have seen Ollier's successors of the Lyons school at the same job in 1916. The skin-tight plaster for fractures and the immobilising plaster for wounds are two different things, and ill-timed Böhlerism at the C.C.S. may lead to many amputations at the base.

Chapters on fear neuroses by J. H. MacDonald, on shock and hæmorrhage by John Fraser, and on first-aid instruction by J. M. Johnston complete a useful and timely book.

Tuberculosis of Bone and Joint

By G. R. GIRDLESTONE, M.A., B.M. Oxon., F.R.C.S., Nuffield professor of orthopædic surgery, University of Oxford; honorary surgeon and honorary clinical director, Wingfield-Morris Orthopædic Hospital, Oxford. London: Humphrey Milford, Oxford University Press. 1940. Pp. 265. 30*s*.

IN this book Professor Girdlestone gives a clear account of tuberculous disease of the skeleton. In the first chapters there is a general description of the local and general manifestations of the disease. This is followed by an account of the disease as it affects the different joints and bones and the problems of diagnosis and treatment which may arise. The author stresses the importance of general as well as local treatment and strongly advocates the use of carefully controlled heliotherapy. He favours the school of rigid immobilisation, often quoting the dicta of H. O. Thomas and Robert Jones, and tends to describe only one method of treatment for many of the lesions. Thus in discussing the treatment of the tuberculous hip he only mentions the Robert Jones frame, not referring to the simple weight and pulley extension or Pugh's method of extension on an inclined plane. In the description of local treatment of tuberculous disease of the knee there is, curiously, no mention of the use of the Thomas splint which is so useful in the gradual correction of deformity and gives the extension with immobilisation which is so desirable. Professor Girdlestone favours the plaster spica to immobilise the knee, by which means half the patient is excluded from the healing rays of the sun. In treating spinal caries both the Robert Jones frame and the plaster bed are described and an account given of the production of compensatory curves. In the chapter on Pott's paraplegia the author is much less conservative in his treatment than the majority of orthopædic surgeons and favours early operation.

The book is excellently produced and the radiograms are of a high standard. Not all of those treating tuberculosis of the skeleton will agree with the author's views, and they will find this a stimulating book.

Anatomy of the Human Skeleton

(4th ed.) By J. ERNEST FRAZER, D.Sc. Lond., F.R.C.S., professor of anatomy in the University of London. London: J. and A. Churchill. 1940. Pp. 300. 30*s*.

IN his study of human anatomy the student is usually required to examine the skeletal framework before he begins dissection. This course has been found to be the most economical in time and energy, even though no bone is really comprehensible until something has been learnt of the "soft parts." With this knowledge the student can re-examine the bones of the skeleton and see the real significance of their shape, size and variations, and of their grooves, fossæ, ridges, tuberosities, and other markings. Moreover, such a study provides an interesting method of general revision, since a comprehensive treatise on the skeleton must inevitably take into account all the soft parts with which it is in relation. Herein lies the value of Frazer's book, for it deals essentially with the bones as they stand in relation to surrounding structures. Probably, with changing ideas of the value for practising clinicians of a knowledge of osteological minutiæ, the book will not find such a demand from candidates for the higher medical and surgical examinations as heretofore, and many will regard this as a step in the right direction in the development of medical education. Nevertheless, Frazer's unique book will remain indispensable to those who need a really detailed knowledge of human bones. No physical anthropologist, for instance, who must glean every possible scrap of information from a scrutiny of fragmentary skeletal remains, should feel himself qualified for the task until he has thoroughly mastered this book.

Practical Food Inspection

(2nd ed.) By C. R. A. MARTIN, M.R.San.I., chief sanitary inspector, Whitstable. Vol. I: Meat Inspection. Pp. 316. 15*s*. Vol. II: Fish, Poultry and Other Foods. Pp. 284. 12*s*. 6*d*. London: H. K. Lewis and Co. 1940.

SINCE 1932, when Mr. Martin's textbook first appeared, the technique of meat inspection has altered little, but there have been great changes in the preparation of other foods which require new methods of inspection, and the Food and Drugs Act of 1938 has altered legal procedures. The fundamental rules of food inspection and condemnation in this country have remained unchanged since the Public Health Act of 1875 and generally are biased in favour of the consumer, but in one important matter there has been much development in recent years. The diseases of food animals which render their flesh dangerous to man are mostly infections which do not produce structural changes or much evidence in their carcasses, so their detection is extremely difficult. For this reason antemortem inspection of animals about to be slaughtered is necessary and there is general agreement that for meat inspection the services of a veterinary surgeon should be available, though the general routine of food inspection is best left to sanitary inspectors, who are specially trained for the work. This book is mainly written for food inspectors engaged in everyday practice, so no more of morphology and pathology is given than is necessary to decide the wholesomeness of food. To them its value is high. And students of public health will find in it much practical information not included in manuals of public-health practice. Medical readers may find the pathology elementary, some of the biology questionable and the chapter on food-poisoning too sketchy to be of much value, but they will not read the book for these subjects. The first volume deals only with butcher's meat; the second with all other food inspection and with legal procedure.

Modern Treatment in General Practice Yearbook

Edited by CECIL P. G. WAKELEY, D.Sc., F.R.C.S., F.R.S.E., senior surgeon, King's College Hospital, London. London: Medical Press and Circular. 1940. Pp. 312. 12*s*. 6*d*.

WITH this issue Mr. Wakeley has adhered more or less to the plan of previous years, though it is open to question whether in a book intended primarily for general practitioners space need be found for such subjects as osteogenic sarcoma, giant-cell tumour of bone, and the treatment of severe hyperthyroidism. Incidentally a comparison of this last article, written by Dr. George Crile, jun., with that by Mr. E. G. Slesinger on the treatment of thyrotoxicosis reveals striking differences of opinion as to the best line of treatment. On the whole the teaching is conservative, but it is to be hoped that Mr. Gordon-Taylor's article will not result in the wholesale intervention of the surgeon in the treatment of hæmatemesis. Mr. P. B. Ascroft's article on the surgical treatment of arterial hypertension is outstanding for its conciseness and clarity, and Mr. Philip Mitchiner on the treatment of burns under war conditions and Dr. Lionel Whitby on the treatment of septicæmia have written eminently practical expositions. The general practitioner will undoubtedly find the book useful, but he need not feel bound to read it all.

THE LANCET

LONDON: SATURDAY, APRIL 20, 1940

HOBSON'S CHOICE

WE are slowly beginning to grasp in this country that food is rationed far more by price than by the fiats of the Ministry of Food. Rationing by price has been in operation since the beginning of history, and few nations except the Jewish have done much to lighten it. The Manchester school of economy would view with horror any attempt in that direction, but in the long run the communist principle must prevail: "To each according to his needs" in order to obtain "from each according to his ability." For modern war is a totalitarian activity, and if each man is to give of his best to the national cause he must be fed, and not only fed but ensured an optimum diet. "Morale and powers of endurance cannot be maintained unless the whole population is on a diet good enough to maintain it in health"—so write Sir JOHN ORR and DAVID LUBBOCK [1] and no dietitian would gainsay them.

Today we have statutory rationing of butter, sugar, bacon and meat, and margarine may be added before long. This has been done avowedly to make sure that rich and poor alike get their fair share of these commodities. The scheme, with its multiplicity of registration cards, coupons and officials, was intended to prevent the well-to-do from what COMPTON MACKENZIE would call their pleonectic proclivities if not to aid the meionectic. It was meant to assure to each one of us 4 oz. of butter and 4 oz. of bacon a week, but it was forgotten or never known that the poorest third of the population could not afford even in peace-time more than the minimum diet necessary for health, and that they cannot buy 4 oz. of butter or 4 oz. of bacon a week. This accounts for the later increase in the rations and the present derationing of pork. Anyone who makes inquiries in the poorer neighbourhood of town or country will discover that the shops have not been able to sell their full quota in spite of surreptitious extras to their better-off customers. Thus though rationing has no doubt had the desired effect of reducing national consumption of the affected foods by making the cooks of the rich put more kidney and less steak in their pies and modify their more Beetonian receipts, it has not helped the poor to get their share. For them it is Hobson's choice (his customers had to take the horse nearest the door, whether they liked it or not); their diet depends as always on their weekly wage, and the rise in prices has pushed it still further towards inadequacy.

What can be done? We are not quite like a beseiged city in which the authorities would distribute each man's share without reference to cost. Here the method must be by rigid control of food prices combined with instruction of the public as to how they can spend their housekeeping money to the best advantage. Dietitians will agree with ORR and LUBBOCK that "With sufficient milk, vegetables and potatoes there need be no malnutrition. With sufficient bread, fat (butter or margarine), potatoes and oatmeal, there will be no starvation." Apparently there is no insurmountable difficulty in obtaining from abroad a sufficiency of the energy foods, wheat and fat, but there is grave difficulty in persuading the country of the need for concentrating on the production *and* consumption of the protective foods. The Ministries of Food, Health and Education are embarking on a campaign to educate the people in the principles of sound nutrition. And good luck to them. They will need all the help they can get from our profession. It takes the mind of a genius to see truth simply but it would need a craniotomy to ensure getting it into people's heads.

1. Feeding the People in War-time. By Sir John Orr and David Lubbock. London: Macmillan and Co. 1940. Pp. 88. 1s. 6d.

PREVENTION OF ADHESIONS

MUCH surgical ingenuity has been expended on the prevention and cure of adhesions in various parts of the body, but it has been handicapped by lack of knowledge of why they form or why they disappear. In the peritoneal cavity the glueing together of omentum and intestine about an infective focus, such as a perforated appendix, is secondary to the formation of a fibrinous exudate on the peritoneal surfaces, and often preserves life by localising the infection. On the other hand widespread adhesions may follow an aseptic exploratory laparotomy in which no viscus has been opened and interference has been minimal. This unfortunate occurrence is difficult to understand. Acting on the assumption that fibrin is the usual precursor of adhesions a number of attempts have been made to avoid them by using substances that are held to destroy fibrin, such as amniotic fluid and papain, but these measures have proved disappointing. Another line of attack lies in preventing the formation of fibrin. Heparin possesses such an action in the blood and has met with a greater measure of success when used in the peritoneal and pleural cavities. LEHMAN and BOYS [1] have lately experimented on rabbits and dogs in which peritoneal adhesions were induced either by mechanical damage or by bacterial contamination. In the rabbits both methods were used and from three to five days later the abdomen was reopened and the adhesions divided. In one group of rabbits the abdomen was then closed without further treatment; in a second group 25 c.cm. of normal saline was left in the cavity; in a third group the same volume of amniotic fluid (Amfetin) was substituted for the saline; and in a fourth group the same volume of saline containing 750 units of heparin was used. The same amounts of these various fluids were also injected by paracentesis on the first and second days after operation. A week later the adhesions had re-formed in all the rabbits except

1. Lehman, E. P. and Boys, F. *Ann. Surg.* March, 1940, p. 427.

the heparin group, in which only one rabbit out of the twenty was affected. In the dogs adhesions were produced by bacterial contamination and were divided after six weeks. The same three control groups were established, 100 c.cm. of amniotic fluid being instilled in the third group and the same volume of saline containing 3000 units of heparin in the fourth group. When re-examined a fortnight later all the control animals in the first three groups had more adhesions than before. In the heparin group, however, there were less than before. These results are encouraging, but as LEHMAN and BOYS point out the time has not yet come for their application to human subjects. Whereas no complication of the treatment was observed in any of the rabbits, three of the twenty-four dogs which received heparin died from profuse intra-abdominal hæmorrhage. Further experiments in which scrupulous hæmostasis can be vouched for will show whether this is a risk inherent in this line of treatment.

Another part of the body in which the control of adhesion formation is of paramount importance is the brain and its meninges. The mechanism here differs from that in the pleura and peritoneum since the exudation of fibrin plays no obvious part. Injury to the surface of the brain involves the opening up of the subarachnoid spaces and local disorganisation of the circulation of cerebro-spinal fluid. During healing the leptomeninges are replaced by a granulation tissue which unites the surface of the brain to the more superficial tissues. In time this is converted into fibrous tissue, and when the wound has involved the cerebral convexity the slow subsequent process of cicatrisation is often complicated by epilepsy. This complication is one of the bugbears of neurosurgery and has too often marred the post-operative course of a case that should have been a complete surgical success. As experience in the last war showed, traumatic epilepsy is, too, a common sequel of gunshot wounds that perforate the dura mater. PENFIELD demonstrated thirteen years ago that the production of epilepsy in such cases depends on the formation of a vascularised scar of connective and glial tissue through which an ever-increasing traction is exerted on the cerebrum. Evidence of this pull is seen in the displacement of the ventricular wall towards the scar, and in the inward suction of the dura over the scar when it is released at operation from the bone and adjacent structures.

The importance of any measure that will minimise the formation of adhesions over the surface of brain wounds thus needs no emphasis. A technical investigation which appears to serve this end has just been reported by YI-CHENG CHAO, HUMPHREYS and PENFIELD.[2] They use sheets of specially prepared amniotic membrane which they call "Amnioplastin." The amnion is obtained by dissection from fresh washed human placentas. After again being washed the membrane is placed in 70 per cent. alcohol, then stretched and dried on a smooth glass plate. It is preserved either dry or in 70 per cent. alcohol until required for use, when it is autoclaved and transferred to sterile Ringer's fluid or saline. Pieces of this membrane were laid over the surface of the brain in cats after lacerating the pia or even the brain tissue itself. The bone and dura mater were not replaced, the deficiency in the skull being closed with temporal muscle. After ten days the membrane had undergone a mucoid change; above and beneath it fibroblasts had appeared, but there was no evidence of foreign-body reaction. After thirty days no naked-eye or microscopic evidence of the membrane could be found; its complete disappearance without foreign-body reaction is a remarkable observation. The dural defect had been filled in by a connective-tissue layer which was completely separated from the subjacent pia by what appeared to be a continuation of the subdural space. Animals examined after fifty and sixty days showed a similar picture: in no instance were adhesions present between the regenerated dura and the underlying brain. PENFIELD and his co-workers have compared the action of amnioplastin with a number of other materials which have received attention in this field in the past, including untreated human amnion, insultoic (allantoic) membrane, plain catgut membrane, fascia lata, Cellophane, sheets of various metals, fat and Cargile membrane (ox peritoneum). None of these succeeded in preventing adhesions although human amnion made them "very mild." The worst results were with silver foil. In the experiments on amnioplastin and insultoin the test was made more severe by cauterisation or removal of cerebral tissue down to the ventricles and the emplacement there of excised bits of muscle. The case for amnioplastin thus seems to be very strong and it has already been used in human beings at the Montreal Neurological Institute with results that so far seem beneficial. In the treatment of brain wounds careful débridement must precede the application of the membrane to the surface. During the operation the membrane is kept flat and moist between sheets of glass until required, and when lifted into place it adheres at once to the brain and is not easily dislodged. This new technique for the avoidance of adhesions after craniotomy comes at an opportune moment, and if its promise is fulfilled the method may well be extended to other surgical fields where the menace of adhesions still persists.

2. Yi-Cheng Chao, Humphreys, S., and Penfield, W. *Brit. med. J.* March 30, 1940, p. 517.

WHAT IS PERSONAL HARDSHIP?

THE decision of the Minister of Labour to make medical men within the age-limits of current proclamations liable for medical service with the Forces has simplified the task of the professional committees which no longer have to consider personal hardship or physical fitness in their selection. On the other hand their responsibility is greater, for their decision may now be a factor in compelling a doctor to serve. Local commit-

tees in making up their quotas are not now at liberty to take into consideration the individual difficulties of the medical profession in their areas. If a doctor has cause to worry about army pay not meeting his insurance policies or his interest on mortgages, or about the welfare of a widowed mother who is dependent on him, this is no longer a matter for the local medical tribunal to take into account, nor can it guide in any way the application of compulsion by the central tribunal. Hardship of this kind is now a matter for a lay tribunal just as in the case of any other man of military age. After medical examination the doctor can put his troubles before the hardship committee of the Ministry of Labour and he has the same right of appeal to an umpire. So far the issue seems clear enough. But actually while it may be simple to determine what is personal hardship in the case of a tinker or a tailor, it is no simple thing for a medical man to distinguish between his professional and his private interests. His livelihood is so bound up with his practice that it is impossible for him to discriminate between his personal anxiety and his anxiety about the welfare of his patients.

There are admittedly many occasions where the two factors go hand in hand. This is the case with most large single-handed practices and it will be for the local professional committee to decide whether their hesitation to add a man's name to their quota is on the practitioner's account or on account of his patients. It is not usually the case in a three- or four-handed practice where the younger partner should obviously be released for service with the Forces, leaving the older partners to carry on, with temporary help if need be from a locum outside military age, unless there is some additional factor such as specialist work carried out by the junior. There will certainly be enough left for the local tribunals to do, for in approaching the decision whether to exempt a practitioner from service with the Forces the ruling factor must be the maintenance of an adequate medical service for the civil population. They now have the experience gained during the last six months which should have taught them to know the positions from which practitioners can be spared. It might at the outset have been reasonably surmised that general practice in any district could be carried on efficiently by three-fifths of the peace-time doctors, provided that in reception areas an additional doctor would be available for each 2000 evacuees; but the winter has proved this to be untrue and numbers of middle-aged practitioners have worked at a pressure which cannot be kept up without risk of breakdown and which has led some of them to suggest rather bitterly that for them military service would be a holiday. Many times during the winter local committees were called on to supply help in practices from which a partner had left. The committees have come to know pretty well the type of practices from which practitioners were most willing to be released. Such lists should now be available. It seems clear that in most rural areas, and possibly even in some urban areas where many doctors live in a small district, the single-handed practitioner with a large panel cannot be spared without throwing an undue amount of work on the remaining practitioners whose patients will suffer even though a substitute be provided. Two-handed partnerships in a reception area can get along with a full-time locum to take the place of the partner called up. Larger partnerships could carry on with part-time assistance.

If local committees determine, as one may well hope, to base their recommendations on the experience they have gained we have little doubt that they will be accepted by the central tribunal, unless they run counter to the paramount need of the fighting services. Personal hardship no longer concerns the committees, but professional hardship remains an index of public safety.

LONDON'S WAR-TIME MORTALITY

FEW of us today are as we were seven months ago. Civilians and combatants alike, we have changed our clothes and are leading unfamiliar lives in strange places. What has been the effect of all this on the public health? The prolonged closure of schools in urban areas might well reduce opportunities for the spread of the infectious diseases of childhood, but on the other hand the dispersal of urban children in rural areas would, some epidemiologists feared, have a counter-effect. The necessary reduction, at first, of some of the normal public-health services and of the facilities offered by the large urban hospitals was inevitable but unfortunate. The blackout, the increased nervous tension and the rationing schemes (not wholly disadvantageous judging by the last war) have been amongst the many other components of the revised version of civilised life. A state of war, however, is not conducive to the collection and interpretation of vital statistics, and least of all the present war with its redistribution of the population. Only a statistician in an official position, with inside knowledge of the movements of the population and of the possible effects of changes in the procedure of collecting and tabulating the country's mortality records, could possibly undertake the task. It is, therefore, fortunate that Dr. PERCY STOCKS, medical statistical officer to the Registrar-General, whose study of the war-time mortality in London we publish this week (p. 725), has been able to turn his attention to the problem.

The figures he uses are necessarily confined to the administrative county of London as it is only for this section of the country that the Registrar-General's weekly return provides mortality statistics in sufficient detail by cause and age. His method of approach has been to compare the deaths registered in different age-groups, in 3-weekly periods from the beginning of July, 1939, to the end of March, 1940, with the numbers expected in the estimated populations of each of these periods if their death-rate had been the same as in the corresponding weeks of 1938–39. By these means he reveals that the London mortality-rate for the first five years of life has been singularly low; at the

school ages, 5–14 years, there has been no very material change but generally a slight reduction; in young adult life, 15–44 years, there has been some increase in mortality over the level of the previous year, and this rise is also apparent for the older age-groups. Examination of the causes of death responsible for these changes yields information of much interest. At ages under 5 the chief contributors to the lower death-rate were whooping-cough, measles, pneumonia and diarrhœa, while deaths due to tuberculosis and to violence showed some increase. The number of deaths debited to pneumonia at these ages, between Nov. 26 and Jan. 27, was 73; at the mortality-rate of the previous year there would have been 169 and at the rate of the year before that 291. Part of this fall STOCKS naturally attributes to the new methods of treatment which may also have kept in abeyance deaths due to the secondary pneumonias of whooping-cough. The position as regards measles was still more striking. Since 1917–18 the disease has appeared regularly in London with a two-year periodicity and an epidemic was due in the last quarter of 1939. In the December and March quarters of 1935–36 221 deaths from measles were registered; in the same quarters of 1937–38 there were 137; in 1939–40 there was but one. That this sudden break in the biennial sequence is extremely unlikely to have been due merely to chance is obvious, but in confirmation STOCKS shows that the same phenomenon has occurred in Manchester and Liverpool. By the end of 1939, when the epidemic was due, the child density in London was, he says, not greatly below normal and he is more inclined to attribute the absence of measles to the closing of the schools. The subsequent events of this year will be of great interest, as will be the experiences of reception areas. Dr. ALISON GLOVER has pointed out that they also had little infectious illness.

In young adult life the excess mortality in London in 1939–40 over that of 1938–39 lay mainly in the period of the severe weather experienced this winter, mid-December to mid-February. The causes chiefly responsible were diseases of the respiratory system, including tuberculosis. This increase can be explained by the epidemic prevalence of influenza (vide p. 762), which is known to be associated with an increased mortality from respiratory tuberculosis. Withdrawal of the physically fit into the fighting services may also have played a part. It is of interest to note that at these ages deaths from pneumonia showed practically no change in spite of the severity of the winter and the presence of influenza—again evidence of the value of chemotherapy. In middle life and old age the excess mortality of 1939–40 was also a characteristic of the cold spell and the causes mainly respiratory. It can therefore hardly be attributed to the war environment of which frosts and influenzas are certainly not the prerogatives. One special feature of that environment has, however, been the increase in road-traffic accidents, and STOCKS gives a striking demonstration of the effect of the blackout in London. Taking the period Sept. 4, 1938, to March 4, 1939 there were 6 weeks of full moon and in these weeks 39 road-traffic deaths took place; in the six weeks which were 1 week before full moon there were also 39 deaths while in those 2 weeks before full moon there were 37, and in those 3 weeks before full moon there were 44. There was, in other words, no material change in traffic fatalities in London in 1938–39 according to the position of the moon. On the other hand the sequence of deaths in the corresponding weeks of 1939–40 was 63 (full moon), 101 (one week before), 93 (2 weeks before) and 85 (3 weeks before). Moonlight has added value when other light fails.

ANNOTATIONS

SAFETY FIRST

CRITICISM is so stifled by the unquestioned acceptance of any catch phrase that the phrase may become what A. P. Herbert has christened a witch-word, the utterance of which acts as a spell upon thought and behaviour, rendering the one impotent and the other irrational. In the March number (the sixth war bulletin) of *St. Bartholomew's Hospital Journal* [1] Dr. Lindsey Batten makes an uncompromising attack upon one of these witch-words and accuses "safety first" as an influence for evil, especially in our attitude to health and sickness. He finds no support for the principle either in philosophy or religion, declaring that our Elizabethan forbears—and even our nineteenth century grandfathers—would have mocked it, and asks whether doctors are not among the leading and most effective apostles of this pernicious creed. He notes how children brought up on "no risks" are common in the consulting-room and hospital, and that behind the timid parent stands the doctor, who lends the weight of his authority to every shirking of a risk. We circumcise the child "to avoid trouble in the future"; we rightly immunise against diphtheria, but what of our attitude to chicken-pox? Limb pains are, as far as safety first is concerned, equivalent to active rheumatic affection, fidgets to the early stages of chorea, and under the influence of the bewitchery there results curtailment of work, play, freedom and adventure. Some hearts and lives are saved; but at what a cost in spoilt childhood, anxiety, and invalidism!

We must admit that much of this is true; but there are excuses. It is said (but not recorded, perhaps) that towards the end of the last war, when a patient in a shell-shock hospital committed suicide, the officer in charge received a reprimand from the higher powers, who instructed him to take steps to prevent any such happening in the future. He replied that he would not put hundreds of men under restraint as potential suicides and thus hinder their recovery, even if another suicide or two might occur. He was a brave man, but his position rendered him care-free as to a public scandal and there are few of us who could face such chances. We are caught in our own net; we have become apostles of safety and dare be nothing else. Perhaps, says Dr. Batten, the war will break

1. We spell the title out in full because in the same issue the Editor says he is sure that Rahere when answering in a vision the hospital's patron saint did not address him as "Bart."

the vicious circle, and we are happy in knowing that, despite twenty years of "safety first," there remains in our young men the spirit that can express itself in obedience to the alternative "live dangerously."

But we shall not be always at war, and we may be able to return to the wisdom of our ancestors and find the golden mean in the exhortation "look before you leap," for that does not forbid the leaping even if the looking discloses danger. Our attitude is ultimately a matter of our outlook on life in general, and, apart from recognising and avoiding the bewitchery of words, it is well to know that the reasoned and scientific principles of modern civilisation are not beyond challenge when measured against a philosophy that finds satisfaction in something other than "safety first." Lin Yutang, interpreting the philosophy of his country to Western readers, writes:

> A modern Confucianist would take city-licensed pasteurised Grade A milk, whilst a Taoist would take fresh milk from the milkman's pail in the country fashion. For Laotse would have been sceptical of the city licence and pasteurisation and the so-called Grade A, which smells not of the natural cream flavour, but of the city councillors' ledgers and bank books. And who, after tasting the peasant's milk, can doubt that Laotse was perhaps right? For while your health officers can protect your milk from typhoid germs, they cannot protect it from the rats of civilisation.[2]

SEIZURES OF CONTRABAND NARCOTICS

THE work of the League of Nations for the international control of the traffic in narcotic dangerous drugs continues without interruption, though with some limitations, during the war. The extent of the seizure of illicit drugs may be gathered from the summary of the figures for 1938 which is now available. No less than 10,000 kg. of raw opium, nearly 2000 kg. of prepared opium, 24 kg. of morphine, 152 kg. of heroin and nearly 5000 kg. of Indian hemp were reported to the secretariat of the League during 1938. For the last quarter of 1939 similar vigilance was exercised. For instance, from New York came a report last October that seven American citizens and four Italians had been arrested as having been engaged in illicit traffic on the s.s. *Vulcania*. Some 7½ kg. of raw opium from Yugoslavia and 375 grammes of morphine were confiscated. In August and September, 1939, some 112 kg. of prepared opium and 44 kg. of raw opium were seized on the wharf and in underground tanks at Hong-Kong in the possession of Chinese subjects. Information given by the Portuguese government in October and November, 1939, disclosed the seizure at Macao of 680 kg. of prepared opium and 998 heroin pills, together with some raw opium and morphine. Most of these drugs were of Chinese origin and the thirty people arrested were all Chinese. Fines amounting to 20,000 dollars were inflicted. These are examples taken from over a hundred cases of seizure reported during the last three months of 1939 to the secretariat of the League; they suffice to show that any relaxation of the control of the international traffic, which tends to increase during the dislocation of war, would seriously impair the results achieved during the last fifteen years under the series of conventions administered by the League of Nations.

WHAT IS A SPORE?

SINCE Robert Koch in 1876 observed and described spore-formation in the anthrax bacillus not much has been learnt about the nature of bacterial spores. It is agreed that by virtue of their great resistance to noxious environmental conditions their function is mainly protective, but little is known about how or what they protect, their chemical composition or their relationship to the mother-cell. Is there, for example, a spore membrane of some highly resistant substance formed round a vital granule of the parent bacterium, or does the spore consist in its entirety of some material quite different from that of the vegetative cell? Howie and Cruickshank[1] have tackled some of these problems. They provide convincing answers to the questions whether the spore is antigenic, and if so whether its antigen is serologically related to the bacterial antigen. Using bacteria that spore readily, a medium that encourages spore-formation and the technique of agglutinin absorption they have shown that in fact bacterial spores are antigenic, and that the spore antigen is distinct from those of the associated bacillus, and is besides remarkably heat-stable. But as a rule bacteria have a complexity of antigens, and the serological nature of the antibody is related, in the case of capsulated bacteria like the pneumococcus, to the chemical make-up of the capsular envelope and not to the contained bacterial cell. May not the spore also consist of a covering protective membrane with a core of bacterial protoplasm, and may not the changes in the staining reactions of the spore observed during the earliest stages of germination be due to a physical rather than a chemical change in the spore? These questions are posed in the hope that Dr. Howie and Professor Cruickshank will continue their investigations and further illuminate the obscurity surrounding the spore.

THOMAS SYDENHAM

THE traditional English view of Sydenham is that he found medicine wandering in a sterile desert of speculation and adherence to the writings of past masters and redirected her footsteps to the observation of Nature as seen at the bedside. This is certainly part of the truth, but Dr. Karcher,[2] viewing him with eyes unclouded by national predilection, recognises a further aspect of the man which we are apt to forget. He reminds us that Sydenham was a Roundhead trooper in the first phase of the Civil War and a captain in the second phase, and that it was not till comparatively late in life that he turned his mind to medicine. In the eyes of his contemporaries he was a rebel, and when political events forced him to another sphere of activity he remained a rebel—the "trooper turned physician" in Dr. Karcher's phrase. In that fact Dr. Karcher finds the explanation of Sydenham's devotion to the ascertainment of natural phenomena, and of his repugnance to the established order of medical science. It is remarkable that a Roundhead with a well-known record of activity in the Civil Wars rose so soon to distinction and lucrative practice in the early days of the Restoration; for there is no evidence that he suffered for his political opinions. His immunity must partly be ascribed to the intimate friendships he had formed at Oxford with some of the distinguished men of the time. Boyle and Locke were his close friends and he seems to have known most of the circle who composed the Royal Society. That Sydenham's military experiences contributed to the formation of his mature ideas is highly probable, but they were hardly the determining factor. It must not be forgotten that Sydenham was well educated—not indeed a scholar or learned in the sense that Willis or Lower, his contemporaries, were learned, but with a fine command of his own tongue. Some of his English writing, of which but little has come to us, is magnificent in natural eloquence and balanced

2. My Country and My People (Heinemann).

1. Howie, J. W. and Cruickshank, J. *J. Path. Bact.* March, 1940, p. 235.
2. Karcher, H. *Schweiz. med. Wschr.* March 16, 1940, p. 233.

rhythm. Moreover, he was an ardent student and admirer of Bacon and Hippocrates, and also, apparently, of Don Quixote. He, too, found tilting at windmills a congenial occupation, and was a far more skilful performer than the Don. Dr. Karcher finds it difficult to admit real greatness in a physician who could ignore the advances of anatomy and physiology, and indeed it is strange that Sydenham never mentioned William Harvey and seems to have been unaware of the discovery of the capillary circulation by Malpighi in 1661. But Sydenham stands in the direct line of progress in his appeal to facts. "Non fingendum aut excogitandum, sed inveniendum quid natura faciat aut ferat," the motto which he adopted from Francis Bacon for the title-page of his Tractatus de Podraga et de Hydrobe expresses the same watchword as Hunter's advice to Jenner: "Do not think; try." In the end Dr. Karcher finds that the trooper turned physician did more to mould the doctor of today than some of even higher reputation, a conclusion with which no Englishman will quarrel. Sydenham was the first clinical investigator of modern times, and his influence is still alive and directing the whole art and practice of healing. For that reason his fellow countrymen claim for him all but the highest seat in the Temple of Æsculapius.

LIVER PUNCTURE IN INFECTIVE HEPATITIS

THE evidence lately summed up by Findlay[1] in favour of the view that the great majority of cases of the common acute jaundice are associated with an infective hepatitis is strengthened by observations made in Copenhagen. As Sir Arthur Hurst points out in our correspondence columns, autopsies in mild jaundice are almost unknown, but, employing the technique previously described by Iversen and Roholm,[2] these workers have now[3] made up to some extent for this lack by carrying out 38 aspiration biopsies of the liver on twenty-six patients with acute jaundice. The patients, sixteen men and ten women, ranged in age from 18 to 53 years, while the biopsies were made from the 3rd to the 51st day after the appearance of icterus. Four of the patients had been treated with arsphenamine for syphilis, one had received the same drug, though not a syphilitic, and two were chronic alcoholics. Incidentally, Roholm and Iversen coin the word "alcoholist" for such people, a pleasing term which raises alcoholism at once to the level of a sport. The pathological changes found in the livers of all the patients were those of a diffuse hepatitis, characterised by the presence of infiltrating mononuclear cells, destruction of the trabecular structure of the liver cells, necrotic disintegration of the parenchymatous cells in somewhat ill-defined areas of variable size and a varying degree of connective-tissue proliferation either in the portal spaces and round the central veins or else diffused throughout the lobule. The interlobular bile-ducts were normal and the whole picture suggested an infective process of hæmatogenous origin rather than a catarrhal condition of the bile-ducts. The predominant cause of the jaundice appeared to be the impaired function of the parenchymatous cells. The hepatitis was already well-defined during the first week of jaundice, and as a rule subsided within a month after the appearance of the icteric tint. In one patient a fatal subacute necrosis of the liver developed during the course of an apparently benign hepatitis. No difference, however, could be found except in degree between this subacute necrosis and the benign cases, while the cases treated with arsphenamine were indistinguishable both clinically and pathologically from the others. Snapper, Ch'in and Liu,[4] in reporting a case of subacute liver necrosis following the administration of neoarsphenamine and mapharsen, also noted no difference in the liver changes from those found in infective hepatitis. Roholm and Iversen believe that both arsphenamine and alcohol lower the resistance of the liver to a subsequent virus infection. The findings of the Danish and Chinese observers in regard to the liver lesions of infective hepatitis and their similarity to, and probable identity with, those of arsphenamine jaundice thus confirm and extend those of earlier observers. They also support the view that the term "epidemic catarrhal jaundice" is unsatisfactory and should no longer be employed.

1. Findlay, G. M. *Jour. R. Army med. Cps.*, February, 1940, p. 72.
2. Iversen, P. and Roholm, K. *Acta med. scand.* 1939, **102**, 1; see *Lancet*, 1939, **2**, 1326.
3. Roholm, K. and Iversen, P. *Acta path. microbiol. scand.* 1939, **16**, 427.
4. Snapper, I., Ch'in, K. Y. and Liu, S. H. *Chin. med. J.* 1939, **56**, 501.

CAMPS OF TODAY AND TOMORROW

IN the good old pre-the-last-war days the word "camp" suggested soldiers, or perhaps boy scouts, leading a simple but healthy existence under canvas. Since then camps have taken on a more permanent form. Tents have given way to the unsightly converted railway carriage, the admirable youth hostel, or the luxury settlement for holiday-makers sometimes to be found near our brighter seaside resorts. Among these pseudo-hotels Mr. W. H. Hamlyn, F.R.I.B.A.,[5] thinks we were in danger of losing the real camp with its simple open-air life and community spirit. Today there is a fresh danger. Evacuation and military operations have artificially stimulated the rate of building camps. What is done quickly is often done haphazardly and sometimes badly, and Mr. Hamlyn begs us pause to think. Paid holidays lately granted to workers would be a gross extravagance if the worker from the city slum had to spend his holiday in what is often only a seaside slum. At the Sign of the Aspidistra is an uninviting hostelry. Mr. Hamlyn reckons that after the war a quarter of the camps required for our 4 million evacuees will still be needed for holiday-makers of the lower income groups (a body of the population which may then include nearly all of us), while other camps growing up round war-time factories could later be used as nuclei for new settlements in a decentralised industry. But we must tell our architects now what is to be built for permanent use and what for "the duration." With their help the main structures of selected camps can be made flexible and suitable for conversion later to peace-time purposes. A rigid regimented lay-out with careful planning can often be adapted to a more pleasing design without loss of efficiency. In the camp Mr. Hamlyn sees the future solution of the working-class holiday. Under wise leadership he thinks the workers should return rested in body and enriched in mind. And they certainly would from his imaginary camp on the west coast of Scotland, which he describes with nostalgic detail, where walking, bathing, boating, fishing and folk-lore will be combined with more orthodox urban recreations.

5. Bossom gift lecture delivered under the Chadwick Trust on April 9.

SEX-HORMONES AND THE FOÀ-KURLOFF CELL

SINCE its discovery fifty years ago the Foà-Kurloff cell has enjoyed considerable obscurity, and to the few aware of its existence its function has not been revealed. This is not surprising, for it appears to be confined to the blood and spleen of the guineapig and would pass as an orthodox member of the lymphocyte

family were it not that its cytoplasm is vacuolated. Within the vacuole is an "inclusion" consisting of material arranged in granules, rods or skeins, and taking nuclear and vital stains. The cell is present in greater numbers in the female than in the male, becoming more plentiful in the mother during pregnancy, and is very scarce in the young. Claims from abroad that the ratio of the Foà-Kurloff cell-count to the total leucocyte-count varies with the supposed concentration of sex-hormone in the circulation stimulated Ledingham of the Lister Institute to renew his interest in the cell after an interval of over thirty years. His results, recently reported,[1] are a clear confirmation of these claims. Using pure hormones, and keeping untreated litter-mates to control his experimental animals, he has demonstrated that after a latent period of a few days the injection of œstradiol is followed by a considerable rise in the number of Foà-Kurloff cells, castration and spaying being followed by their virtual disappearance. The effects of œstrogens are so various and often so unexpected that the findings cannot at present be said to suggest anything with regard to the function of œstradiol. The fact that removal of the testes has the same qualitative effect as removal of the ovaries, while testosterone, though in a minor degree, seems to have a similar action to œstradiol, does not encourage speculation. It may conceivably be significant that the thymus, a lymphatic organ, responds in the opposite direction, its involution being delayed by gonadectomy and hastened by the administration of sex-hormones. This, however, is a reaction common to most animals while the Foà-Kurloff cell is confined to the guineapig. Ledingham does not say whether or not it is found in the thymus. The first practical outcome of these observations will probably be an exploitation of the relatively large number of Foà-Kurloff cells which can now be made available for study. The fact that they respond to œstrogens —a property shared, for example, by smooth muscle and bone—cannot at present be said to have much bearing on the question whether the "inclusion" has an endocrine function.

ELECTROCARDIOSCOPY

THE use of the cathode-ray oscillograph in electrocardiography is now well established in this country as well as in America. For the busy clinician it has the advantage that it can be used under any conditions of room lighting, that the record can be seen on the luminous screen, thus eliminating the necessity for taking actual photographs, and that it is more speedily adjusted than the string galvanometer models. The time thus saved in a busy consulting-room or cardiac clinic is considerable and where a high degree of accuracy is not required, as in the detection of the commoner arrhythmias, there is little doubt about its value. On the other hand it is as a rule an unreliable guide to the finer points of electrocardiography, and where accurate measurements are required there can be no question that the older principle of the string galvanometer still holds the field. Donzelot and Ménétrel[2] now describe a cathode-ray oscillograph of their own design for which they claim certain advantages not possessed by other models, including easier manipulation and observation and less cost. With true Gallic enthusiasm they compare "electrocardiography" with radioscopy, much to the disadvantage of the latter, and dilate joyfully their experience with a patient who, admitted to hospital as an emergency on account of persistent vomiting, accidentally found his way to their department, where as a result of a routine "coup d'oeil" on their electrocardioscope a diagnosis of coronary thrombosis was made two days before there was any clinical evidence of the catastrophe. While few cardiologists would be prepared to subscribe to such enthusiastic support, the cathode-ray oscillograph provides a satisfactory and convenient method of electrocardiography for many purposes. For accuracy and research, however, the older string galvanometer remains supreme.

1. Ledingham, J. C. G. *J. Path. Bact.* March, 1940, p. 201.
2. Donzelot, E. and Ménétrel, B. *Pr. méd.* April 3, 1940, p. 350.

CANCER RESEARCH

AT Wednesday's annual meeting of the Imperial Cancer Research Fund Mr. Hugh Lett made a statement on the work of the fund and Dr. W. E. Gye described the research of the last three years. This turns largely on the artificial production of cancers and Dr. Gye set out the reasons for this preoccupation. The fact that malignant new growths can be induced at will in almost any part of the body proves, he said, that the occurrence of some cancers at least is related to environment which can be controlled. This lends assurance to the belief that cancer can and will be mastered by patient research. It is no longer a question of some mysterious uncontrollable inborn peculiarity. He outlined briefly work shortly to be published by Dr. B. D. Pullinger who has found that the polycyclic hydrocarbons known to induce cancer evoke within two to four days of their application a characteristic reaction which may be specific. Cells and their nuclei swell; cytoplasm becomes vacuolated; multiplication of cells follows, their increase in size being progressive; cytoplasmic degenerations appear in some cells while others show signs of recovery. It seems clear that the chemically related hydrocarbons which do not induce cancer fail to evoke this reaction. Also ready for publication is Mr. A. G. Crabtree's observation of substances which check the utilisation of glucose by tissues. Various chlorine compounds can under different conditions either retard or accelerate the rate of induction of tumours by carcinogenic hydrocarbons. But even the most active chlorine compound did not completely prevent the formation of multiple warts. It is satisfactory to know that work of this calibre is continuing to justify the granting of the Royal Charter almost on the day on which war was declared. Happily there has been no need as yet to surrender the new laboratories for war emergency work.

THE TAVISTOCK CLINIC

AT its meeting on March 20 the senate of the University of London agreed to approve the Tavistock Clinic for a period of five years as an institution at which teachers may be recognised for the instruction of students pursuing courses of advanced study and research. Under present conditions the relevant courses taken by internal students of the university are postgraduate courses for the higher degrees and the course for the academic postgraduate diploma in psychology. The clinic, of course, continues its regular course of postgraduate medical instruction.

Sir COMYNS BERKELEY has been re-elected chairman of the Central Midwives Board for the year ending March 31, 1941.

Dr. HERBERT PENNELL HAWKINS, C.B.E., who died at Horsham on Tuesday was consulting physician to St. Thomas's Hospital. He was in his 81st year.

We regret also to announce the death in Liverpool on April 10 of Mr. HERBERT FRANCIS WOOLFENDEN, senior surgeon to the Royal Infirmary, aged 60. Until his retirement a month ago he was chairman of the United Hospital Medical Board.

PREVENTION AND TREATMENT OF WOUND INFECTION

III

BACTERIOLOGY OF INFECTED WOUNDS

By Robert Cruickshank, M.D. Aberd., D.P.H.
PATHOLOGIST TO THE L.C.C. GROUP LABORATORY, NORTH-WESTERN HOSPITAL, HAMPSTEAD

(*Concluded from p. 706*)

Before discussing the specific prophylaxis and treatment of infection in wounds something may be said about the sources of the particular pathogens concerned, and the general measures which may be adopted to prevent their access to the wound.

SOURCES OF INFECTION

The source of infection may be autogenous or exogenous. Streptococci and staphylococci may be present in the upper air-passages and on the skin, and the sporing anaerobes and coliform bacilli in the bowel of the patient himself; it is infection with the pyogenic cocci which is most likely to be autogenous. Some 2 to 5 per cent. of adults carry *Strep. pyogenes* in the throat, while *Staph. aureus* is present in the anterior nares of 40 per cent., and both of these organisms may be found on the hands, which transfer them to the wound if it is open, accessible and insufficiently protected. In a similar fashion these pyogenic cocci may pass directly or indirectly from carriers—ambulance man, nurse, doctor—who may dress or otherwise attend to the wound. Thus in the last war 15–20 per cent. of wounds were infected with either *Strep. pyogenes* or *Staph. aureus* or both by the time—an average of twelve hours—the patient reached the casualty clearing station,[1] and these organisms must have come from the upper respiratory tract or hands of the patient or his attendants. The recent experience of Devenish and Miles[2] shows that certain skin-carriers of *Staph. aureus* are particularly dangerous in that the organism cannot be eliminated from the hands by "scrubbing-up," and being sweated into the gloves during operation may pass through needle punctures into the wound.

When the patient is transferred to the main hospital he is usually admitted to a large ward where there are already septic cases, and the chances of his wound in turn becoming infected—if it cannot be or has not been closed by primary suture—are high. The conditions are closely simulated by the admission of patients with burns to special wards where it has been found that the incidence of third-degree burns infected with *Strep. pyogenes* rose from 11 per cent. on admission to 66 per cent. by the sixth day.[3] No doubt manual transference has played its part in the spread of hospital infection, but with an adequate and intelligent nursing staff trained in aseptic and antiseptic technique this mode of transfer must nowadays be much less frequent. Evidence has been accumulating of late that the air and the dust of the ward are probable sources of infection, and experience teaches that the hæmolytic streptococcus does not need to be specially invited to attach itself to an abraded surface.

In the case of the sporing anaerobes, although *Cl. welchii* is commonly and the others including *Cl. tetani* are rarely found in the human gut, these organisms are most often carried into the wound by infected soil on the missile or on the clothes or skin of the patient. It is usually stated and believed that gas gangrene occurs most often in battlefields where the soil is well cultivated and manured (e.g., in the last war its incidence in France was much greater than in the East), but in fact there are few data on the natural distribution of the pathogenic clostridia. Zeissler and Rassfeld[4] in an examination of samples of soil collected from various European war-zones found *Cl. welchii* in 100 per cent., *Cl. septique* in 8 per cent., *Cl. œdematiens* in 64 per cent.* and *Cl. tetani* in 27 per cent. of 193 specimens examined. Fildes[5] found *Cl. tetani* in 57 out of 79 samples of soil from the cultivated fields of England but not at all from the "wilds of Scotland." The sporing anaerobes flourish on decaying organic matter, and the presence of such matter in the soil may facilitate infection by increasing the dosage and the activity of these pathogens.

Unsterile and imperfectly sterilised dressings may harbour *Cl. welchii* and *Cl. tetani*, and the risk of infection from such a source in the dressings of large open wounds is obvious. The ineffectiveness of alcohol for the sterilisation of syringes and needles has often been pointed out, and *Cl. welchii* has been cultivated from the alcohol in which syringes were stored. Solutions for hypodermic injection may also, if imperfectly sterilised, be a source of infection; pituitary extract and adrenaline particularly, if not immediately massaged into the tissues, may produce the local ischæmia and tissue-necrosis suitable for the germination of *Cl. welchii*, which may be carried in with the needle or the solution or conveyed by the blood from the gut or a primary infection elsewhere in the body.

GENERAL PREVENTIVE MEASURES

If the habitats of these pathogens and the means by which they reach the wound are known, it is an obvious duty to try to prevent their access to the susceptible tissue. In the case of the clostridia present in the earth or on soiled clothing little can be done. The sterilisation of dressings, syringes and solutions should be under the control or supervision of the bacteriologist. Much has already been learnt and done in preventing spread of infection with the pyogenic cocci. For example, the use of masks and gloves and isolation of the septic case have proved their worth in the prophylaxis of streptococcal puerperal sepsis. Whether masks (with or of Cellophane) and gloves could be used in field-ambulance work is doubtful, but efforts might be made to get the dressers to use masks and a skin-antiseptic such as Dettol cream while actually attending to the wound at the regimental aid-post. Later, when the patient reaches the casualty clearing station, the surgeon should be both masked and gloved and thus by example encourage his lay assistants to do likewise. Further, the surgeon who is a chronic skin-carrier of *Staph. aureus* must try to avoid needle-puncture of his gloves and should wear batiste oversleeves to cover the sleeves of his gown. Repeated dressing of the injured part should be avoided, and apropos the plaster treatment of open wounds there is a great advantage from

1. Stokes, A. and Tytler, W. H. *Brit. J. Surg.* 1918–19, **6**, 92.
2. Devenish, E. A. and Miles, A. A. *Lancet*, 1939, **1**, 1088.
3. Cruickshank, R. *J. Path. Bact.* 1935, **41**, 367.

* A third of the strains of *Cl. œdematiens* were non-pathogenic for laboratory animals whereas all strains of *Cl. welchii* were pathogenic. Yet the high incidence of this anærobe in soil together with the findings of Weinberg and Ségnin in gas gangrene suggests that in the last war *Cl. œdematiens* was a more frequent cause of infection than *Cl. septique*. Its isolation, never easy, has been facilitated by a test recently described by J. Gordon and J. W. McLeod (*J. Path. Bact.* 1940, **50**, 167).

4. Zeissler, J. and Rassfeld, L. *Veröffentl. Kriegs. Konstit. path.* 1928, **5**, 199.
5. Fildes, P. System of Bacteriology in Relation to Medicine, London, 1929, vol. iii, p. 321.

the view-point of preventing or minimising infection in a dressing which can be left undisturbed for 7–10 days.

In hospital an attempt might be made to keep the "clean" and the "septic" cases separated, and for this purpose small wards of 4 to 8 beds are much to be preferred. But if, as is likely, clean and septic cases have to be nursed together in large wards, every effort must be made to prevent manual and aerial spread of infection. Overcrowding must be avoided, dust should be removed by damp sweeping and dusting or by vacuum cleaning, while adequate cross-ventilation is an excellent way of cleansing the atmosphere. Unfortunately, with an enforced blackout, natural ventilation has to be restricted, and artificial methods of air-disinfection may become necessary, particularly if the ward is overloaded with infections due to one pathogen—e.g., *Strep. pyogenes*. The use of "aerosols" and ultraviolet light is still in the experimental stage, but if encouraging results are obtained, there seems an obvious field for their application in operating theatres and "septic" wards. Medical or nursing staff with manifest or latent streptococcal infection should, if possible, be debarred from dressing open wounds, and cases of streptococcal tonsillitis among the patients should be isolated. It cannot be too strongly emphasised that in hospital wards the arch-enemy is *Strep. pyogenes*, and every effort must be made to prevent its spread.

SPECIFIC PROPHYLAXIS AND TREATMENT

In this chemotherapeutic era, the place of specific antibody in the prophylaxis and treatment of bacterial infections must not be lost sight of, particularly where the bacteria concerned are actively toxigenic, for example, *Cl. tetani* and the gas-gangrene group, for the sulphonamides have probably little direct neutralising effect on toxin.

Pyogenic infection.—Prophylaxis by specific vaccines offers many difficulties and is not at present a practical procedure. In the treatment of acute severe streptococcal infection, antisera, whether antitoxin of the kind used in scarlet fever or the so-called polyvalent antiserum, have not proved their general usefulness when used alone. For chronic infections, such as the discharging sinus, the infected joint or the non-healing wound, vaccines have been used, and may be helpful either in conjunction with chemotherapy or in cases where sulphanilamide is ineffective or contra-indicated. The vaccine should be autogenous and should be given in doses ranging from one to ten million organisms at intervals of 3 to 4 days. In the treatment of generalised staphylococcal infection or a severe local lesion with profound toxæmia, antitoxin in large doses intravenously (40,000–60,000 units) has given good results, and should probably be combined with chemotherapy. Staphylococcus toxoid, often a better stimulus for antibody production than vaccines, may be used in the subacute and chronic infections.

Gas gangrene.—The usefulness of antitoxins for prophylaxis and treatment is still in dispute. In civil practice many surgeons with a large experience of the treatment of injuries maintain that the prophylactic use of the antiserum is unnecessary. In Spain, Trueta[6] dispensed with its use when dealing with air-raid casualties and other war wounds, and had only one case of gas gangrene among over 1000 cases. It is true that the treatment of gas gangrene is primarily surgical, but we must not forget that the causal organisms are all highly toxigenic and that intoxication is a prominent feature of the disease. Specific antitoxins should, therefore, play their part both in the prevention and treatment of a disease which progresses so rapidly. If routine prophylaxis is not to be practised the surgeon must quickly learn to know the kind of injury in which the prophylactic use of antiserum is indicated. It is particularly required for cases where there is likely to be any delay in débridement. Thus, American observers[7] found that among some 4000 wounded soldiers sent to an evacuation hospital, 5 per cent. developed gas gangrene, and of these 90 per cent. had symptoms of the infection before reaching the hospital, the average length of time between injury and operation being 41·8 hours. By contrast, there was no case of gas gangrene among 349 severe non-transportable cases who were operated on within 24 hours of injury. The British experience in 1918 with prophylactic *Cl. welchii* antitoxin combined with tetanus antitoxin was that the incidence of gas gangrene among cases coming to the base hospitals was reduced and the case-mortality approximately halved.[8] By the kindness of Dr. E. Armigo and his colleagues of the Bacteriological Institute of Chile at Santiago I have seen a preliminary report of the results obtained with specific antitoxins in the prophylaxis and treatment of gas gangrene which followed the earthquake there in January, 1939. Their findings confirm the experience in the last war that specific prophylaxis combined with surgical attention is effective if the patient is seen within 24 to 36 hours of injury. Antitoxin used therapeutically was beneficial if given intravenously in large doses (a total of 40,000–50,000 I.U.).

Since the infection is usually a polymicrobial one, the prophylactic antiserum should contain a mixture of the three common infecting types (in France and America antitoxin to *Cl. histolyticum* is sometimes included). The dosage recommended in this country is 3000 units of *Cl. welchii*, 1500 units of *Cl. septique* and 1000 of *Cl. œdematiens* antitoxin, which is probably adequate for most cases seen within 6–12 hours of injury. If there is a delay of more than 24 hours between injury and treatment, it is advisable to give a full therapeutic dose to the patient in whom, from the nature of his injury, gas gangrene might be expected to develop. Ordinarily one injection given intramuscularly should be sufficient, but late cases of gas gangrene do occur, and pathogenic clostridia have been isolated from sequestra months after the original injury,[9] so that a patient in whom anaerobic infection has been proved or suspected should be given a further prophylactic dose if he is being operated on at a later date.

Therapeutically, gas-gangrene antiserum should be used (*a*) along with surgery either as an adjunct to surgical excision or to render the patient fit for operation; or (*b*) in cases where surgery is impossible. The results in the last war have been carefully analysed by the Committee on Anaerobic Bacteria and Infections,[10] who reported that the "results obtained in France have exceeded expectations." Since then there has been a great improvement in the potency of these antitoxins and a great reduction in volume of the therapeutic dose. For the established case of gas gangrene large doses must be given, and as in other toxic infections, such as diphtheria and tetanus,

6. Trueta, J. *Proc. R. Soc. Med.* 1939, **33**, 65.

7. United States History of the World War. Medical Department of the U.S. Army in the World War. Washington, 1929, vol. xii. p. 413.
8. History of the Great War, Medical Services, Pathology. London, 1923.
9. Douglas, S. R., Fleming, A. and Colebrook, L. *Spec. Rep. Ser. med. Res. Coun., Lond.* No. 57, 1920.
10. *Spec. Rep. Ser. med. Res. Coun., Lond.* No. 39, 1919.

the earlier the serum is given the more effective it is likely to be. The serum should be given intravenously if possible, a difficult task sometimes in a patient with gas gangrene, and since there is usually an accompanying secondary shock it may well be combined with a transfusion of plasma or whole blood. It should also be injected as a "barrage" round the gangrenous area, and this and the intravenous antitoxin should be repeated every four to six hours until the patient is clinically well. The recommended therapeutic dose has been provisionally fixed at not less than 7500 antitoxin units of *Cl. welchii*, 3750 units of *Cl. septique* and 2500 units of *Cl. œdematiens*, but in an established case the initial injection should probably contain 3, 4 or 5 therapeutic doses, and further dosage will depend on the patient's response. As soon as the infecting pathogen has been identified, the corresponding monospecific antitoxin should be used. Full records should be kept of treated patients, and in fatal cases the possibility of other causes contributing to death—e.g., streptococcal septicæmia, or pneumonia—must be carefully considered. Unpublished work by D. W. Henderson and P. A. Gorer of the Lister Institute indicates that for infections with *Cl. welchii* and *Cl. septique* combined treatment with the specific antitoxins and sulphapyridine should give much better results than either alone. A similar combination may also be most effective in prophylaxis.

Tetanus.—Antitetanic serum for the passive protection of wounded soldiers reduced the incidence of tetanus in the last war from 9 per 1000 in 1914 to less than 1 per 1000 in 1917 and 1918. This reduced incidence was accompanied by a lengthened incubation period (from 11·8 to 48 days) and a lowered case-fatality rate (22·6 per cent. in the inoculated and 53·3 per cent. among the uninoculated) in a series of cases treated in England, and an increase of "local" tetanus from 1·1 per cent. to 23·4 per cent. Since then, active immunisation with tetanus toxoid has been introduced by the Army as a voluntary measure and adopted by the Royal Air Force. Two doses of 1·0 c.cm. are given with a six-weeks' interval between; the reaction is slight and the resulting immunity is sufficient to protect the individual for at least two years after inoculation. Since active immunisation is not compulsory, and as an additional precautionary measure, the Army Medical Service recommend that the wounded man should also be given a prophylactic dose of antitetanic serum (3000 international units). For the uninoculated patient with a wound severely lacerated or not surgically excised, a further prophylactic dose of 1000 units should be given weekly for several weeks. The French, with compulsory active immunisation, advocate a further injection of toxoid for the wounded and already vaccinated soldier; the advantages are obvious. For air-raid casualties among the civil population, passive protection with tetanus antitoxin must be the routine procedure. In the treatment of the declared case of tetanus, massive dosage (100,000–150,000 units) should be given intracisternally or intraspinally, intravenously and intramuscularly as well as subcutaneously round the wound. But, as in gas gangrene, the best form of treatment is prevention, and the best form of prevention is specific prophylaxis plus early excision of the wound.

One last point may be made regarding the present-day tendency to treat bacterial infections with the sulphonamides alone. These drugs seem to act directly on the micro-organism or its enzymes, and do not help or stimulate the body's natural defences. Specific antisera neutralise immediately the toxins or specific substances elaborated by the pathogens, while vaccines and toxoids, by stimulating the host's antibody-production, do so more slowly. There is much experimental evidence in support of the view that a combination of the two forms of therapy may be expected to be most effective in holding the invader in check, so allowing the natural defences of the body to complete its destruction.

SPECIAL ARTICLES

THE NEXT B.P.

SOME indication of the contents of the next British Pharmacopœia was given last week by Dr. C. H. Hampshire, secretary of the Pharmacopœia Commission, at an evening meeting of the Pharmaceutical Society. Besides mentioning the items which it is proposed to add to the official book he showed specimens which he invited those interested to inspect; from the fact that these exhibits were presented it may be assumed that it is the commission's present intention to include the substances concerned in the draft Pharmacopœia to be submitted in due course for the approval of the General Medical Council. The efficiency of the B.P. as a book of standards is to be enhanced by the inclusion of standards and assays not only for crude drugs and chemicals but also for as many galenical preparations and compounded drugs as possible. This was recommended earlier in the year by the committee on pharmacognosy (*Lancet*, 1940, **1**, 59). The proposed new monographs are the following:—

Cod-liver oil emulsion, liquid paraffin emulsion, dried extract of witch hazel, liquid extract of senna, glycerin of acriflavine, diamorphine linctus, oily aconite liniment, methyl salicylate liniment, nucleotide solution, compound solution of sodium chloride, acriflavine lotion, calamine lotion, tannic acid paste, compound digitalis pills, compound bismuth powder, compound catechu powder, kino with opium powder, spirit of lavender, adrenaline suppositories, bismuth subgallate suppositories, cocaine suppositories, hamamelis suppositories, hamamelis with zinc oxide suppositories, syrup of codeine phosphate, tincture of gelsemium, gall and opium ointment, hamamelis ointment, diluted ointment of mercury, compound ointment of methyl salicylate—and the following *injections*: calcium gluconate, procaine and adrenaline, quinine and urethane, and sodium morrhuate.

The organic chemicals which it is proposed to bring into the Pharmacopœia are the following:—

Mandelic acid, calcium mandelate, calcium lævulate, parachlorometacresol, urethane, vanillin, sulphanilamide, β-phenylisopropylamine, β-phenylisopropylamine sulphate, cyclopropane, pyridine-β-carboxylic acid diethylamide, and theophylline with ethylenediamine.

Sulphanilamide, said Dr. Hampshire, is provisionally selected as the best-known member of the sulphonamide group which is free from patent complications. The inclusion of parachlorometacresol in the list is because of its use as a bactericide in sterilising solutions for injection and as a bacteriostatic preservative in certain solutions. Calcium lævulate is recommended in order that methods of preparing and sterilising solutions may be defined. Mandelic acid and calcium mandelate are commonly prescribed; Dr. Hampshire said that an elixir of ammonium mandelate was under consideration.

The principal preparations of the vitamin group recommended for description are: standardised concentrated solutions of vitamins A and D; a vitaminised oil standardised to contain vitamins A and D in the proportion contained in a good average specimen of cod-liver oil; halibut-liver oil containing not less than 30,000 units of vitamin A per gramme, and pure crystalline aneurin hydrochloride to replace the adsorbate of vitamin B_1, described in the addendum of 1936.

Inorganic chemicals proposed for inclusion are calamine, bismuth subgallate, dried magnesium sulphate, dried sodium phosphate, dried sodium sulphate, potassium chloride, and sodium metabisulphite. Calamine is described as basic zinc carbonate, suitably coloured with ferric oxide; the test for loss on ignition excludes the form of calamine which contains added zinc oxide. Sodium metabisulphite is introduced as anti-oxidant for addition to solution of adrenaline hydrochloride and injection of procaine and adrenaline. The use of this substance as a preservative may, said Dr. Hampshire, be extended to other preparations.

The following are the items in the category of crude drugs and oils which have been provisionally recommended for inclusion in the next B.P.: Activated carbon, galls, gelsemium, kino, dried lemon peel, volatile almond oil, white essential camphor oil and sodium morrhuate.

The substances classified as sera, vaccines and biologically-tested preparations which are under consideration are: Antitoxinum hystolyticum, toxinum staphyloccicum detoxicatum, toxinum tetanicum detoxicatum, vaccinum choleraicum, vaccinum staphylococcicum, insulinum protaminatum cum zinco, progesteronum. In this field the B.P. is kept closely in line with the regulations under the Therapeutical Substances Act. These regulations provide for the control of biologically tested substances in Great Britain and Northern Ireland and the B.P. extends the control to other parts of the British Empire in which it is accepted as a legal standard.

When the B.P. 1932 was issued it was intended to revise it every ten years, alternating with the decennial revisions of the United States Pharmacopœia; the next Pharmacopœia was to appear in 1941, five years after the appearance of the eleventh revision of the U.S.P. But the U.S.P. authorities have changed their general policy owing to war conditions and the commission has recommended the G.M.C. to delay publication of the new B.P. But the work of revision goes on and in the meantime addenda to the B.P. will deal with special difficulties as they arise.

IRELAND

(FROM OUR OWN CORRESPONDENT)

A PUBLIC HEALTH PROGRAMME

IN a paper published in the *Irish Journal of Medical Science* for February Dr. C. J. McSweeney, medical superintendent of the Dublin Fever Hospital, outlines the main advances he thinks needed in the public-health organisation of Eire. He concentrates on the provision of ad-hoc services intended to benefit the individual citizen, and particularly the individual child, rather than on those for the community as a whole. Dealing first with infectious diseases he notes that the type of diphtheria current in Dublin is particularly virulent, and he regrets that preventive immunisation has not been carried out more generally. Immunisation should be made compulsory. Measles and whooping-cough are also potent causes of child mortality in all large urban centres, and he wished these diseases were notifiable in Ireland. There is a great lack of hospital accommodation for children suffering from measles or whooping-cough, and this lack of accommodation causes an increased mortality. Dr. McSweeney thinks that 100 hospital beds are required in Dublin alone for each of these diseases. Gastro-enteritis is another cause of high infant mortality in Dublin, but as its seasonal incidence differs from that of measles and whooping-cough, it does not call for greatly increased hospital accommodation. Dr. McSweeney recalls that when the extensive suburban housing schemes which have recently been finished in Dublin were being planned, little or no attention was paid to the establishment of schools in the newly inhabited areas. Until such schools have been provided it has been necessary to transport the children by bus from their homes to the schools in the city. Dr. McSweeney remarks that this herding of children into a small space for a journey twice a day is calculated to propagate the spread of infections. Speaking of juvenile tuberculosis he deplores the absence in Ireland of any open-air schools. He next discusses the need for special provision for the care of juvenile rheumatism. At the close of his paper Dr. McSweeney returned to a topic which he has already brought before the medical profession—namely, the danger to the public from the fact that Ireland is entirely dependent on other countries for the supply of sera and other biological products used in the prevention and treatment of disease. He points out that a national emergency elsewhere might easily lead to a shortage in Ireland. Moreover, since infective strains of bacteria differ in different countries, it is reasonable to expect that therapeutic products made from strains prevalent in Ireland would be more potent than those imported from elsewhere.

THE IRISH HOSPITAL SWEEPSTAKES

It had been recognised since the beginning of the war that the future of the Irish sweepstakes was uncertain, and, in particular, that the degree of success of the sweepstakes held last week on the Grand National would act as a guide to the promoters as to their activities in the future. As a matter of fact the results of that sweepstake exceeded expectations, and a sum of more than half a million pounds was received. The promoters, however, find an increasing difficulty in marketing their tickets, and the interruption of direct communication with the United States has been specially embarrassing. The Hospitals Committee, acting on the advice of the promoters, Hospital Trust Ltd., has decided not to hold a sweepstake on the Derby, and to leave in abeyance the question of holding one in the autumn. Left in this position, Hospital Trust Ltd. have decided to put that company into voluntary liquidation, probably because if they did not do so they would have remained saddled with the responsibility of a large but temporarily idle staff. This step has given rise to a mistaken belief that the Irish hospital sweepstakes have been definitely abandoned. No such decision has been made. The chairman of Hospitals Trust has issued a statement that it is intended to form another company with somewhat wider powers and capable of promoting sweepstakes if thought proper. It is understood, indeed, that while future sweepstakes may be on a more modest scale, there is good prospect of resuming the series in the autumn.

HUTTED HOSPITAL

THE hospital huts that have sprung up since September at the behest of the Ministry of Health are no things of beauty, but some say they will turn out to be a joy for ever. The typical hut designed by the Office of Works is 144 ft. long by 24 ft. wide, and is built of brick or breeze blocks on a steel framework, plastered on the inside and covered on the outside with grey corrugated asbestos sheeting. Cedar has also been used. The roof is of asbestos sheeting, coloured according to taste. The outside and inside paint is in pastel shades of pale blue, green, grey or yellow, the yellow being the most satisfactory as being less liable to run into patches on incompletely dried walls. The floor is of concrete covered with linoleum. This standard hut can be adapted as a ward, kitchen, or operating and X-ray block, or its space can be divided up into cubicles to provide sleeping accommodation for nurses or into a dining-room and two recreation-rooms for their use. The original plans reproduced here have been modified to a certain extent to meet local needs or the views of superintendents. In the most usual lay-out the huts are built in pairs with their main entrances opening opposite one another on a central covered corridor, some 30 ft. being left between each pair.

The *ward hut* (fig. 1) is designed to hold a minimum of 36 beds, and this allows three or four feet between beds. There is a double door 4 ft. 6 in. wide at each end and four similar doors on each side, so that the ward can be aired well on warm days and hasty evacuation in an emergency should be easy. The addition of concrete paths surrounding and interconnecting the huts would allow the beds to be moved outside in the summer. The wards are bright, airy and warm and patients say they are comfortable. They are heated by three coke-burning stoves arranged down the centre. These need frequent black-leading and stoking—a noisy and tedious proceeding—four-hourly day and night. Patients are said to sleep through the clatter of the coke-bucket with a little practice. The water is heated in a separate boiler-house for each ward, and these boilers might well have been enlarged to heat the wards. The main entrance (on the left in fig. 1) opens into a short corridor on either side of which are the lavatories for staff and patients, two bathrooms, sluice, cupboards for soiled and clean linen, sister's room and ward kitchen, with a gas stove for making tea and doing the little cooking that is not done in the main kitchen. There is not much provision for patients' clothing and luggage, but air-raid casualties are likely to travel light.

FIG. 1—THE WARD HUT

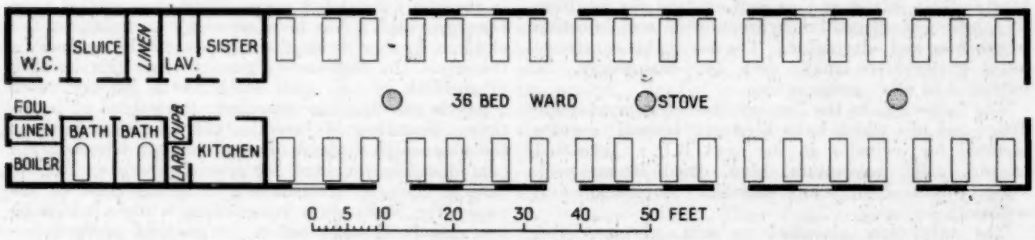
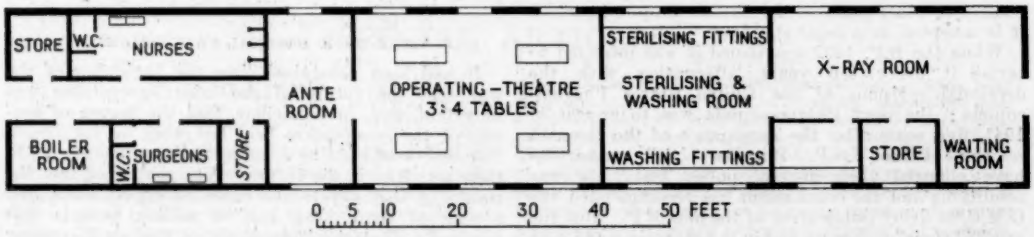
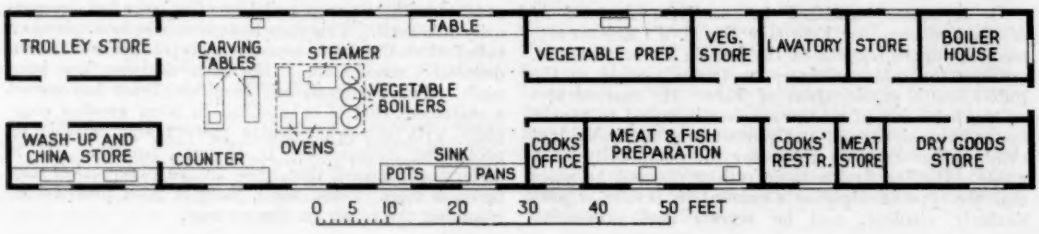


FIG. 2—THE OPERATING HUT



The *operating hut*, which also houses the X-ray room, varies in size according to the size of the hospital it serves. Fig. 2 is the plan for a hospital of 400 beds, with a theatre 36 ft. long. For one with 200 beds and only two tables the theatre is 24 ft. long, and larger hospitals may have five or six tables and a theatre 48 ft. long. It seems doubtful whether a 36-ft. theatre will be found large enough for four

FIG. 3—THE KITCHEN HUT



tables in practice. The nurses' rooms also vary in size. The rigid table lights fitted present some obvious difficulties, and a gutter and drain in the theatre floor would help rapid cleaning after an operation. Where the floors are covered with linoleum, however, a gutter might allow water to creep underneath. Ventilation in the theatres and more particularly in the sterilising and X-ray rooms leaves much to be desired and gas sterilisers are sometimes fitted without a vent for fumes. An exhaust fan in the X-ray room is essential. The boiler for service water sometimes holds only 60 gallons, which will soon be used by surgeons scrubbing up under running water. In some sterilising-rooms, too, all water has to be carried across the room to the sterilisers. A more serious omission, which is noticeable throughout these hutted hospitals, is the lack of covered ways for the patients. Theoretically patients reach the X-ray room by the door at the right-hand end of fig. 2, but since there is no covered way to this door they will often have to be taken through the operating theatre.

The *kitchen hut* (fig. 3).—All food is cooked here and taken to the wards on trolleys. The metal containers have double walls with wood between to make them reasonably heat-retaining. The trolleys can be clipped together so that one man can pull several at once, but he will have to be a strong man where the way from the kitchen is up-hill. In the kitchen inspected cooking will be done by gas, but this varies with the services available. The cooks foresaw no difficulties in satisfying the needs of 300–400 patients.

In criticising these huts it must be remembered that in an emergency it is impossible to emulate peacetime standards. We are undoubtedly getting better temporary hospitals than ever grew out of the last war.

SCOTLAND

(FROM OUR OWN CORRESPONDENT)

THE EFFORT SYNDROME

IN his Honyman-Gillespie lecture in Edinburgh last week on the effort syndrome in the present war, Prof. F. R. Fraser said that in civil practice this condition is comparatively rare. In war-time, however, it is common, and the Ministry of Health has already set up a special organisation. The effort syndrome is no new disease, for in 1867 Maclean described cases in the British Army which he ascribed to the strain of heavy packs and their straps across the chest along with too tight uniforms. DaCosta, in America, described a large series particularly among the troops in the American civil war. In his opinion the ætiological factors were infections, particularly diarrhœa, and wounds, but he recognised that the patients had often shown symptoms before enlistment and he advocated that new recruits should be gradually trained and not sent to the front lines too early. Thereafter there was a gap in the literature until 1914–18 when there were so many cases that a special hospital was set up in Hampstead for their study and treatment under Sir Thomas Lewis, together with five centres in France. The system of graduated exercises was developed both for diagnosis and treatment. During the last war about 80 per cent. of the men invalided on account of "heart disease" were suffering from the effort syndrome. Various analyses made during and shortly after the last war showed that slightly more than half the cases had shown symptoms before enlistment. Among this group many gave a history of previous infections but in the majority there was an indefinite gradual onset. This was the method of onset also in most of those who developed symptoms only after enlistment but in them the other common causative factor was trauma. At this period most observers came to consider the condition a purely psychogenic one, with fear or anxiety as the basis, with "constitutional asthenia" also a factor. Paul D. White, however, from a study of civil cases, thought that heredity, strain due to infections, and mental and physical factors, such as prolonged excitement in the presence of fatigue and exertion constituted the basis of the condition.

In justifying the use of the term "effort syndrome" Professor Fraser said that soldiers suffering from this complaint readily acquire a fixation that the heart is affected because of the frequent examinations, always of the heart, to which they are subjected before the final diagnosis is made and by that time it is difficult to convince them to the contrary. The various labels —D.A.H. and so on—which were used provide a subconscious reason for escape from discomfort with a clear conscience. Avoidance of any diagnostic term drawing attention to the heart is imperative if no organic heart disease is present. Recognition of the condition is easy, the difficulty lies in deciding whether or not early organic heart disease, which may give a very similar picture, is present in addition. Although breathlessness is met with in all cases on inquiry, left inframammary pain is the commonest symptom volunteered by the patients. This pain often spreads over much of the left side of the chest or even a wider area and is accompanied by hyperæsthesia of the skin of the affected area. Giddiness is found in 40 and palpitation in 35 per cent. All cases show tachycardia, often 100–120, all day long but the heart-rate drops to normal during sleep. All these symptoms and the tachycardia are accountable on a basis of undue effort, but the tired, anxious look, the tremor, the headache and the mental and physical weariness must be due to a psychological factor.

In this war a few cases of the effort syndrome came home in the first convoys from France and since then there has been a steady stream both from abroad and from units at home. The special measures required for diagnosis include the services of an expert in cardiological diagnostic methods to rule out organic heart disease, and a psychiatrist. Cases are separated into categories as the result of their examintions. 1. Those who have organic cardiac or pulmonary disease; these are of no further use to the Services. 2. Those who are constitutionally feeble mentally or physically; these also are of no further use as fighting men. 3. Those who have led sedentary lives or are not robust physically, and will often be of use if trained slowly and perhaps employed at the bases. 4. Those whose symptoms arose after infections; most of these can be restored to health. 5. Those in whom the psychological factor is predominant; skilled treatment is capable of restoring many in this group to usefulness. The psychological factor overlaps into all the other groups. This aspect of the problem was not tackled to any large extent in the last war. Professor Fraser described the organisation of the special centre for the effort syndrome at Mill Hill school where cases are sorted, the "useless" ones being boarded and the curable ones treated by graduated exercises, games under supervision and remedial occupations in congenial surroundings. In this war, however, there are, more than ever before, other needs than those of the fighting forces. The rehabilitation of men to their skilled civil occupations may be the best way to restore their health and usefulness to the nation.

An analysis of the first fifty cases admitted to Mill Hill showed that the numbers having symptoms before enlistment and the proportional importance of different ætiological factors are almost exactly the same as in the last war. One important point brought out is that the average time spent in other hospitals before admission to Mill Hill is nine weeks, an unfortunate loss of valuable time.

Professor Fraser concluded by advising that a probationary period of at least a month should be instituted for all recruits during which they could be sympathetically observed. In this way a large number could be eliminated who would otherwise become victims and add greatly to the cost of the war by the necessity for providing them with treatment and pensions.

THE JOHN MARTIN HOSPITAL IN SKYE

An appeal is being made for a sum which will yield an additional income of £200 a year for the maternity annexe of the John Martin Hospital at Uig. This hospital with dispensary and accommodation for nursing and domestic staffs sprang from an individual endowment, which also provided the funds for the building of the maternity annexe. No other such unit existed in the island. There is no intention of undertaking surgical work more appropriately done in the large hospitals in Edinburgh and Glasgow. The intention is rather to make it possible for normal cases to have the desired close coöperation with and supervision by doctor and nurse, especially when distance makes adequate observation at home difficult or housing conditions make necessary isolation or quiet impossible. Steady progress is shown in the numbers of patients admitted since the annexe was opened in 1937, and satisfactory vital statistics have been obtained. A charge is made for patients but it must be modest or it cannot be met. It is the practice of the hospital to modify the charges whenever need exists.

IN ENGLAND NOW

A running commentary from our Peripatetic Correspondents

OUR public-assistance institution is at last upgraded. Nine of our ten huts are finished and the tenth only needs paint and internal fittings. The operating-theatres in the old building are actually in action two days a week and our automatic potato-peeler stands ready for the call. But six months ago we had our doubts and it has been uphill upgrading all through. I was one of the first of the older hands to arrive at the circumference of the sector on the day that the Polish invasion started. Within twenty-four hours forty reinforcements arrived—sisters, nurses, senior staff, students and technicians from our mother hospital in London. The men were soon lodged in a casual ward and the ladies were billeted after a fashion outside. We did a lot of improvising in the first ten days. There were many windows but nothing with which to darken them. We borrowed a Rawlplug outfit, picture cord, ladders and hammers, and some old dark blankets. When the old blankets ran out we fell back on the new ones marked G.R. and drew on the first-aid post stock, repulsing the attacks of the A.R.P. quartermaster. Four weeks after our arrival 500 yards of dark material came and the nurses made real curtains. The students undid bales of sandbags, filled them, and barricaded our vulnerable points. The first unit to get into working order was the staff kitchen—complete with cutlery and crockery commandeered from our home hospital's nurses home. About a third of the pathological department from "home" came down with its guineapigs and rabbits. The X-ray department soon followed and by the end of September had accumulated enough films to last them eighteen months at full capacity. An army of workmen began on the huts with a smooth confidence and precision that was a joy to watch. The Office of Works had to be told that patients need a staff to look after them, but in the end they saw the point and agreed to cubiculise two huts for nurses—and a good job they have made of them. Splints came in their thousands by lorry, a few sheets and blankets, collapsing beds, hot bottles, a nightshirt or two, clinical thermometers, porringers and telephone extensions. Quantities of dressings and a few old instruments were here before us. The rest dropped in in surprise packets with no indication of their contents. One crate I remember contained 4 large enamel bowls, 14 small ditto, 2 pairs of tracheotomy dilators, 3 abdominal retractors and much brown paper that had to be searched for small oddments. We had our own leaflet war. Sometimes supplies arrived before their consignment-notes and sometimes afterwards. Long lists had to be checked, counter-checked and entered up in triplicate. By a process of elimination it was possible to sort the pieces out—sometimes. Did they belong to the beds already sent or those to come? Always assuming they were meant for us.

Meanwhile the casual ward, a cold, cheerless place, was slowly being made more habitable for a long campaign. Electricians and plumbers came and went. We were promised floor-coverings and even cupboards. Our mess-room at least was large and airy in spite of its concrete walls and floor. We made ourselves into a club, with a mess-president, officers and rules, and a licence to sell our beer in bottle. We had a piano, a wireless and a notice board. The five students going up for their final had daily coaching in examination tactics. The rest got lectures on the ear, nose and throat, a tour of the neighbouring home for mental defectives and demonstrations on one or two good cases in the local infirmary. The one case of auricular fibrillation was well and truly auscultated. Three woman arrived—paying their own passage—for a Wertheim, but alas our theatre was not up to the strain and they had to be sent elsewhere. We sighed for our lovely operating-table and anæsthetic wagon now parked in the basement in London. Incidentally not a single eye-instrument appeared on the schedule of equipment for a base hospital and there was nothing allowed for such a thing as an aching molar.

Every day brought its alarms, excursions or minor crises. Sector officers arrived, went round, expressed their surprise at our somewhat cold comforts, said something must be done, and departed. We went on hoping and improvising. There were minor crises in the billets too. Mrs. Brown could not manage more than bed and breakfast; her husband had osteo-arthritis and she was not too strong herself. Mrs. Jones would have young doctors but no nurses; their hours were far too irregular. The necessity for some sort of nurses home on the premises became more and more obvious and we began to cast our eyes on one or two Naboth's vineyards. Our dealings with the local authority were characterised by cheerful coöperation within the unavoidable limits of bureau-

cracy. The locals had their own troubles and I look back on their help now with gratitude. The leaflet war went on all the time. Orders came from on high, were countermanded next day, and restored the day after. Authority was worried by the inexplicable delay on the part of the enemy to do what was expected of him. At the end of September we were still an advance party. Our staff was still only a skeleton one though there were rumours that the full establishment would arrive before long; not that there was anything for them to do if they did come. By that time we could have functioned at short notice as a sort of glorified convalescent home, we could have tackled a few very selected surgical or medical cases, and we even had some quite promising equipment for casualties—A.T. serum, M. & B. 693, and a stock of anæsthetics. Nevertheless the dismal fact remained that the only parts of the hospital which were really ready for anything were those staffed and equipped en bloc from our old home in London. I suppose when one is digging a front-line trench one never knows what is happening at G.H.Q., at least until zero hour arrives, so perhaps the doings of our working party begging, borrowing or scrounging, and improvising as best they could, were part of some prearranged plan of which we mere mortals know nothing.

* * *

The health questions of war-time can be divided into three groups: the special problems caused by war conditions, the functioning of ordinary current work and schemes for future development. So far only the first has been touched upon. Ordinary current health work goes on fairly regularly, but it is affected by shortage of administrative staff and by much deviation of function of the officers so that they have less time to devote to routine health work. Unlike the last war, when nearly all the whole-time medical staff were in the Army, most of these men remain and carry on with their normal work. In the last war it was rather a nightmare to maintain even a skeleton efficient service but in this war that side of it has not been difficult. The medical inspection, tuberculosis, venereal diseases, maternity and child-welfare work all go on much as usual, incorporating in their stride our thousands of evacuees. Meat slaughtering and distribution is now done at a few selected centres and most of the slaughter-houses in the county are idle. What effect this concentration of effort will have on the future of meat slaughtering and meat inspection it is difficult to say.

It is as regards future work and immediate new developments that the most striking and in many ways most far-reaching changes are noticeable. The war at once stopped all new developments other than those that were urgent. The demolition of unfit houses and the provision of new council houses to replace them stopped. Only those in course of construction were allowed to be completed. Schemes for new water supplies, sewage-disposal works and the like had to be put into cold storage, to the delight of the slackers and the unprogressive who are only too willing to use the war as an excuse for inactivity. While the exigencies of war warrant and demand this limitation of capital expenditure now, it is imperative for the future of the country that we should look ahead and refuse to regard present conditions as permanent. Of course the length of the war and the financial position at the end of it are paramount factors, but there is more to it. After the war there will inevitably be much available labour unemployed and its steady utilisation is essential. During the war there should be a scheduling of all new work, including such new health work as housing schemes and water-supply developments. There is no reason why these should not be proceeded with now up to the stage of full plans and preliminary arrangements, so that when the war is over they can be put in hand in an orderly stream, regulated according to the materials available at normal prices (as distinct from the absurdly inflated prices after the last war) and the kinds of labour seeking an outlet. If the prices were artificially kept up the types of work affected would not be put into operation until the profiteers brought them down. This anticipation of the requirements of the future is as necessary as our direct war efforts.

Obituary

IVOR RIDGE-JONES

M.C., M.R.C.S.

Dr. Ridge-Jones, who died at Millbrook near Plymouth on Feb. 29, was the third son of Dr. Thomas Ridge-Jones, physician to the Victoria Hospital for Sick Children and for many years resident medical officer at St. George's Hospital. The son was educated at Eton College and Trinity Hall, Cambridge, going on to St. George's from which he qualified in 1912. Two years later he took a tropical diploma and spent some time in Egypt. During the late war he served in Mesopotamia with the rank of captain, R.A.M.C., and later in the North Persian campaign where he was decorated for gallantry. He also received the North Persian Medal with two clasps. From 1922 to 1932 he was Government medical officer in Iraq and was awarded the Order of El Rafudain by the late King Feisal. On leaving Iraq he acquired the practice of the late Dr. J. Currie at Cawsand near Plymouth and carried on an extensive practice in the parishes of Maker, Rame and Millbrook. His death occurred suddenly from a heart attack when he was in his surgery. He was 55 years old and unmarried.

JOSEPH GOODWIN-TOMKINSON

M.D. GLASG.

Dr. Goodwin-Tomkinson, who died in Glasgow on April 12, had retired five years ago at the age of 66 from the active practice of dermatology. He was a native of Alsager, Staffs, and graduated M.B. with commendation at Glasgow University in 1901, afterwards continuing his studies in Paris, Berlin and London. Until a few years ago he was McCall Anderson memorial lecturer in dermatology in the University of Glasgow and consulting physician to the skin department of the Glasgow Western Infirmary, consulting dermatologist to the Glasgow Hospital for Diseases of the Ear, Nose and Throat, to the education health services of Glasgow and the county of Dumbarton and to the county council of Lanark. He was professor of diseases of the skin in the Anderson College of Medicine and a member of the Glasgow and West of Scotland radium committee. In 1928–29 he was president of the British Association of Dermatology and Syphilology and in 1922 he served as vice-president of the section of dermatology at the annual meeting of the British Medical Association. He leaves his wife with one son.

Dr. ARTHUR EDWARD MILLS whose sudden death on April 10 is reported from Sydney, New South Wales, was deputy-chancellor of Sydney University. His whole life had been spent in that city; he qualified there in 1889, straightway becoming R.M.O. at the Royal Prince Alfred Hospital, and retiring as consulting physician in 1929.

LETTERS TO THE EDITOR

SKIN UNITS WANTED IN HOSPITALS

SIR,—In the official history of the last war the section on skin diseases opens with this paragraph. "Diseases of the skin, if syphilis is excepted, are generally regarded as lesser maladies, that is to say, conditions which as a rule neither threaten life nor seriously impair health. For the individual this is true, but in the case of an army the collective results of such minor affections may become of high importance, because for military purposes a man incapacitated from duty is a loss to the fighting force whatever the extent or cause of his personal disability."

The casualty-rate from skin diseases in the British Army in France was considerable, and necessitated the formation in 1916 of special base hospitals. Quoting again from the official history: "In one army in the later stages of the war it was stated that skin diseases and P.U.O. accounted for 90 per cent. of all sickness." (Trench fever was the commonest cause of P.U.O.) Most of the cases consisted of pyodermia, secondary to scabies or pediculosis, infective dermatitis, and seborrhœic dermatitis or eczema. The average duration of incapacity was 61 days. The cases therefore represented a serious drain on the personnel of the Army.

The crowded conditions of trench warfare and the unhygienic conditions associated with active fighting and movement of troops were responsible for this parasitic infestation. Up to now this stage has not been reached in this war, but the rapid increase in size of the Army in England has already given rise to problems in the management of skin diseases in the Services at home. I can only speak from personal knowledge of the conditions in the E.M.S. sector to which I am attached. The emergency hospitals are being used to accommodate skin cases from the Army, Navy and Air Force. In this sector skin cases have been mainly disposed in two hospitals but other hospitals of the sector have been used to take smaller numbers. There is also a military hospital with 70 beds for the treatment of skin diseases.

In spite of the static conditions of the war I have been struck by the large number of skin cases we have been called on to treat, and many of these cases had been in hospital for three months or more. These cases represent a loss in the strength of the Forces, and further, a long stay in hospital with a disease which does not produce a general constitutional disturbance but often disturbs sleep has a bad effect on morale and not infrequently provokes a condition comparable to traumatic neurasthenia. The majority of cases being admitted are seborrhœic eczema and those secondary to scabies, secondary chronic impetigo and pyodermia. The incidence of scabies before this war was apparently rising in many parts of the country, and is certainly increasing as a result of evacuation. It was shown during the last war that troops returning from England were often infected and in their turn infected men in the forward zones. An increase in scabies is then to be expected in the future, both among the civilian population and among the members of the Forces.

Men of about twenty joining the Army are at the seborrhœic age, and their tendency to develop seborrhœic affections will probably be increased as a result of dietetic change. The same dietetic changes may be of importance, together with unaccustomed exercise with friction of the flexures, in cases of flexural psoriasis which have been seen. The incidence of fungus infections of the feet is much greater than it was in 1914. It can be expected that there will be a considerable number of cases in the Army in the summer.

The time has come for the better organisation of the treatment of skin diseases in the Forces in England. The numbers of cases are already considerable and will no doubt be greater in the future. I think it is important to provide skin units in hospitals, either in the Army or under the E.M.S. Such skin units could form part of a general hospital, and it is preferable that they should do so, for the treatment of skin diseases is not divorced from general medicine, and the stimulation and advice of specialists in other branches of medicine should be available. The skin unit could be used as a training ground for doctors. A few weeks' course should give recently qualified doctors a working knowledge of the skin diseases likely to be met with in the Forces, and most recently qualified doctors are anxious to get additional experience in dermatology. The atmosphere of a ward solely intended for skin diseases and the attitude of its personnel is quite different from one in which a few skin cases are treated among other medical diseases. Both sisters and nurses become keen and expert in the treatment of their cases. When there are regular attendances of an expert dermatologist the patients quickly appreciate the definite and competent direction of their treatment. The duration of chronic pyodermia and eczema is shortened.

For a unit of some 200 beds the personnel should include a dermatologist of consulting rank and two additional medical officers, one of whom should have had dermatological experience. There should also be a small department for physiotherapy, including an artificial sunlight lamp, a small diathermy machine, and a superficial X-ray therapy set. The latter is essential for the treatment of many chronic cases of eczema, infective dermatitis and fungus infection. The services of a psychologist should be available for advice on cases of chronic prurigo, eczema and urticaria. If military cases are being treated in a skin unit under the E.M.S., there should be a liaison officer to be responsible for records, to maintain discipline, and to direct recreation and rehabilitation.

I am, Sir, yours faithfully,

Guy's Hospital. L. FORMAN.

PRIMARY SUTURE OF WAR WOUNDS

SIR,—In your issue of April 6 you made some comments on a paper presented by Dr. Roux-Berger to the meeting of the French Academy of Surgery on Jan. 17. You say that at that meeting criticism was made of "The practice employed in the Spanish civil war of treating wounds by primary suture and the application of plaster. . . ."

I am at a loss to understand this interpretation of the views expressed at this meeting, at which the Spanish war was not mentioned. In point of fact, Dr. Roux-Berger denounced the use of the primary suture for war wounds, but his argument was based on his own experience in treating French soldiers. His views on this point are shared by the surgeons of my country, including myself, as may be seen from the statements I have made on various occasions since I came to England. In an article published in THE LANCET on June 24, 1939, I used these words: "In very few cases was the skin sutured." In my book, published in September, 1939, I wrote (p. 26): "It is only in very exceptional cases that the wound of a

gun-shot fracture can be sutured." Again, in a lecture given to the Royal Society of Medicine on Nov. 22, 1939, I said: "In wounds from aerial bombs, which constitute the greater part of my experience of war wounds, one seldom sees cases where suture of the skin is possible." I am therefore surprised to find that such a misconception should exist as to the use of this method in Spain.

With reference to the use of plaster-of-paris, Dr. Roux-Berger did not criticise this at all. In fact, he quoted two cases of severely infected wounds in which he successfully employed the closed method after a very careful operation.

There is one point of surgical technique in which I do not share Dr. Roux-Berger's views—the extremely meticulous resection of the bone splinters which, according to his method, takes two hours to be achieved. I entirely agree with Dr. Maurice Chavassu's views expressed at the same meeting in the following words: "C'est cette esquillectomie soignée qui demande, dit-il, deux heures de travail. En ce moment ou il n'y a par bonheur qu'un nombre infime de blessés, fort bien. Mais en période de fonctionnement tant soit peu intensif, au moment où les blessés affluent, deux heures de travail pour un seul c'est bien long." This was my own experience during the bombardments of Barcelona.

There is another point that I should like to emphasise. When the writer of your article speaks of "The practice employed in the Spanish civil war," I assume he is referring to the technique used by surgeons of the Republican side—*i.e.*, those of the hospitals and medical schools of Barcelona, Madrid and Valencia. I have no knowledge of the methods employed by the surgeons of Franco's army, though I am well aware that many of them were surgeons of great ability.

Although not myself an army surgeon, I am well acquainted with the methods employed by the most distinguished surgeons of the Spanish Republican Army, including the best known orthopædists and traumatologists (Professors Manuel Bastos, Trias Pujol, D'Harcourt, Gonzalez Aguilar, Lopez Trigo, and others). All these surgeons without exception treated war wounds without sutures. I myself have used sutures only in cases of newly-inflicted articular wounds.

I am, Sir, yours faithfully,

Oxford. J. TRUETA.

INFECTIVE HEPATITIS AND CATARRHAL JAUNDICE

SIR,—In his letter of March 30 Dr. Hope Simpson throws doubt on the statement in your annotation the previous week that in addition to the mild jaundice caused by hepatitis a second form exists which is caused by catarrh of the common bile-duct associated with duodenitis. As mild jaundice does not itself lead to death, most of the evidence must be clinical and biochemical, and Keith Simpson and I showed in our paper in *Guy's Hospital Reports* (1934, 84, 173) that there is quite sufficient of this to make it extremely probable that many cases are truly catarrhal. So far as I know, only a single autopsy on a mild case of infective jaundice has ever been performed. A girl of nineteen died from a fractured skull caused by jumping from a third-floor window the day after admission to hospital in a typical attack of catarrhal jaundice, in which the jaundice was preceded for a few days by symptoms of severe gastritis. Eppinger, who performed the post-mortem, had previously published papers to prove that so-called catarrhal jaundice was a result of hepatitis, and he expressed himself as "disillusioned" (*enttaüscht*) to find the contrary. The mucous membrane of the stomach and duodenum was swollen and showed submucous ecchymoses, and the papilla of Vater was unusually prominent. There was no bile in the duodenal contents, but the common bile-duct, hepatic ducts and gall-bladder were dilated and contained dark sticky bile. The mouth of the common bile-duct was completely obstructed as a result of inflammatory swelling of its wall, and no bile entered the duodenum on compressing the gall-bladder. Macroscopic and microscopic examination of the liver and pancreas showed no abnormality of any kind.

True catarrhal jaundice may occur in epidemic form as well as sporadically. I believe that the Gallipoli epidemic at the end of 1915 was of this nature. I aspirated the duodenal contents in nine cases at Lemnos; the fluid was turbid from the presence of excess of mucus, and Sir Charles Martin found that it contained very numerous coliform bacilli in contrast with the duodenal contents obtained at the same time from healthy men, which was clear and almost sterile on cultivation. I heard of only three post-mortems in Gallipoli cases. In two Sir William Willcox found severe duodenitis, with red swollen mucous membrane of the common bile-duct. I was present at one of these autopsies and was impressed by the intense congestion of the duodenal mucous membrane, which was deep purple and so swollen that it caused obvious obstruction of the ampulla of Vater. In the third case Sir Humphry Rolleston found severe gastroenteritis, and a plug of mucus completely obstructed the orifice of the biliary papilla.

I am, Sir, yours faithfully,

Oxford. ARTHUR F. HURST.

FRACTURED FEMUR IN CONVULSION THERAPY

SIR,—The imputation to me of certain beliefs which are not mine by Drs. A. M. Wyllie and W. Mayer-Gross in your issue of April 6 makes it necessary to reply to their letter in order to make my position clear.

The statement by them that I thought the incidence of fractures in my series of 160 cases is low is quite erroneous and was never implied save in respect to the series of Mr. Gissane, Dr. Blair and Mr. Rank (and, incidentally, is also lower than in the series of Drs. Wylie and Mayer-Gross) and I cited the difference merely in support of my contention that it would "appear to be due" to a difference in technique, more specifically to physical restraint applied to the convulsing patient. I stated: "Details of the activities of the doctor and nurses before and while the patient is convulsing are usually lacking, but one gathers from reading different papers that such activities are directed towards restraining the movement of patients," an altogether different idea than is suggested by Drs. Wylie and Mayer-Gross—"no worker advocates forcible restraint of the patient during the tonic stage of the fit"—as if I had made such a categorical statement.

Their letter considered as a whole tends to shift the main argument to side issues. My main argument was that age or prolonged periods of inactivity are no contra-indications to the employment of convulsive therapy. Secondly, I suggested that the occurrence of Cardiazol fractures might be dependent upon external restraint applied during the convulsion: in saying so, I was not thereby excluding muscular violence pure and simple as a causal factor in their production,

though I am of the opinion that it plays a minor rôle as compared with external restraint.

Furthermore, it is questionable if the figures quoted by them (1·2 per cent. of fractures generally as against my 1·25 per cent. and their own of 2·07 per cent.) detracts from my argument. In practically all reports of fractures in series of cases that I have read the ages of the patients treated is considerably less than the ages of those I have treated, indeed it is uncommon to read of patients over fifty years. Since this is so and if age *is* a factor of importance in the production of fractures, I should have had a much higher incidence of fractures than I actually did have. Also, I stated that most probably the fracture in the lady of fifty-nine *was* due to restraint unwittingly applied. These two points, instead of detracting from my argument, would seem to add considerably to it.

What appears to be a further support for my argument is forthcoming in the figures quoted by Drs. Wyllie and Mayer-Gross themselves (who admit to using restraint, albeit gentle restraint) where in a numerically comparable number of cases (although some of mine were more elderly) their figure for fractures is higher than mine in 25 cases over the age of fifty.

Lastly, I would like to point out how their surmise that "The infrequent occurrence of fractures in epileptics is probably due to the fact that in most cases their bones have been habituated to the strain of fits from youth" is quite inadequate to explain the rarity of fractures in cases of idiopathic epilepsy beginning late in life or in epileptiform attacks (other than those produced by cardiazol) occurring from other causes in the middle-aged or elderly.

I am, Sir, yours faithfully,

Glasgow Royal Mental Hospital. RANKINE GOOD.

LOUSY CLOTHING

SIR,—Recently Professor Buxton [1] described apparatus for determining the critical lethal temperature for lice. He found 53·5° C. for five minutes, 52·0° C. for ten minutes, and 50·0° C. for thirty minutes lethal for eggs. In the case of adult lice he found 51·5° C. for five minutes, 49·5° C. for ten to thirty minutes, and 46·0° C. for forty-five minutes to one hour lethal for both sexes and for immature specimens. A paper he read to the Royal Society of Tropical Medicine and Hygiene [2] stimulated a discussion in which Colonel W. Byam remarked about the infectivity of louse fæces in garments and blankets. The War Office trench-fever investigation committee showed [3] that the infectivity of the louse's excreta is very high; 0·1 mg. has sufficed to give the disease when inoculated into man. The virulence of the excreta is destroyed by dry heat at 100° C. in twenty minutes and by moist heat at 60° C. in twenty minutes.[4] The virus of trench fever seems to be more resistant than that of typhus where the excreta of lice dried in air lose their virulence in a few days.[5] It is a fact, however, that fatalities among research workers who handle the excreta of lice infected with the virus of typhus have been regrettably frequent in the past, before protective vaccination with the preparation of Weigl became possible.

In my own experience, an investigator, a very intelligent man who knew the danger of infection and took full precautions against lice, developed typhus after taking samples of venous blood from five cases who were confined in a small room lacking in ventilation and under extreme conditions of dirt and destitution. The investigator wore protective clothing, which he removed immediately he left the sick-room and placed in a canvas bag for disinfestation. Within an hour he had removed all his other clothing and sent it to the disinfestor, had a bath in dilute lysol and searched his body for lice. After the bath he put on fresh clothing. It was ultimately concluded that this man acquired his infection by inhaling louse fæces released into the air of the room from stirred-up dirty bedding and clothing. At the time there was only the one focus of the disease, and he had no further contact with cases or infective material either before or after the occasion on which he collected the blood samples. In his case the incubation period was thirteen days.

It seems worth considering whether disinfection as well as disinfestation may not be required in the treatment of lousy clothing in areas where trench fever or typhus are endemic.

I am, Sir, yours faithfully,

FRANK MARSH.

Pathological Laboratory, c/o Anglo-Iranian Oil Co., Ltd., Abadan, Iran.

1. Buxton, P. A., *Brit. med. J.*, March 2, 1940, p. 341.
2. *Trans. R. Soc. trop. Med. Hyg.* January, 1940, p. 365.
3. See Trench Fever, by W. Byam, London, 1919.
4. Topley, W. W. C. and Wilson, G. S. Principles of Bacteriology and Immunity, London, 2nd ed., p. 1463.
5. Nicolle, Blanc and Conseil, *C.R. Soc. Biol. Paris*, 1914, **159**, 661.

PEPTIC ULCER IN THE SERVICES

SIR,—The contributors to this discussion ought to set out the evidence that young subjects of peptic ulcer will never be able to resist the rigours of Service cooking. This pessimistic assumption is contrary to the experience of many patients who had a complete remission of symptoms during their war-time service in 1914–18, contrary to German teaching, though admittedly their cooking can't be compared with ours, and contrary to modern ideas on the ætiology of ulcer. Leaving mass destruction of the stomach out of consideration—the Nordic theory that stomachs should be altered to fit the diet instead of the other way round was thoroughly tested on the Continent in the decade after the last war and didn't work—we are advised to turn these patients out of the Forces and send them back to the war-time mental strain of civilian life. If we do so we probably condemn the majority to a lifetime of physical and mental inferiority, as well as depriving the country of the full benefit of men who are possibly more conscientious and intelligent than the average. Even if all our prolific gastroenterological thinkers gave this advice, I should still feel disinclined to accept the opinion of a weak and badly organised branch of British medicine, which year after year grinds out the same old ideas, based on the same fallacy of the selected sample of patients who come to surgery or post-mortem and the same misunderstanding of the radiology and physiology of the gut.

As some of our grandfathers and even great-grandfathers knew, there are two entirely different points to be considered in the treatment of peptic ulcer. The first is: What is the difficulty in the life of the patient which causes the breakdown in gut function? This is no place to argue the pathological chain of events in detail, and of course it varies to some exent from patient to patient, but I believe the commonest answer to this question is that the modern concentrated starchy diet is especially difficult for intestines reflexly irritated by worry and strain, and that this difficulty is exaggerated by sedentary life and vices like aperients, oversmoking and the like. The second point is: How much organic damage has already been done? In practice we start with a bland

diet because experience, experiment and theory all agree that that is the right treatment for a badly damaged or irritable gut. But it is not so obvious until we give unbiased consideration to the results of the last fifty years that a persistent bland concentrated diet promotes the formation of further ulcers. Generally speaking, in elderly patients we neglect the risk of further ulcers forming and concentrate on healing the existing one. But in younger patients we can often equally well afford to neglect the ulcer (unless it is actively inflamed) and concentrate on stopping the process which is causing the ulcers. To do this we must discipline their digestions to cope with bulky meals and that is what we are unable to do under civil hospital conditions where we have to keep the patients in bed.

Is this problem of sufficient importance to try a really large-scale experiment? I should have thought it was, and that now was a time when a large number of patients could be treated on sanatorium lines on a routine of diet and exercise. Ulcer patients are particularly easy to manage once their confidence is obtained, and it should be possible to run an establishment almost entirely by convalescent labour and at the same time have it ready to act as an emergency overflow hospital if sudden need arose.

I am, Sir, yours faithfully,

OPTIMIST.

RESEARCH DEFENCE

SIR,—In view of the renewal of the great efforts made by "antivivisection" societies in the war of 1914–18 to deprive our military forces of the protective inoculations considered necessary for the success of our arms by all military medical experts, may I mention that the Research Defence Society will be glad to forward to any member of the medical profession, who applies to them, a recently published pamphlet entitled Protective Inoculation of the British Military Forces. It would be of special interest to those engaged in the examination of recruits. We can also send reprints of articles, "Twelve Truths about Animal Experiments," "Antivivisection 'Ethics'" and "Prophylactic Inoculations against Animal Diseases in the British Empire." These leaflets will enable medical practitioners to reassure any of their patients whose feelings may have been harassed by the habitual disparagement by the opponents of medical research of all the great advances of the past century due to the experimental methods so essential to the progress of a biological science such as medicine.

I am, Sir, yours faithfully,

LEONARD ROGERS,

Treasurer, Research Defence Society,
11, Chandos Street, W.1.

CEREALS AND RICKETS

SIR,—In an annotation under this heading (*Lancet*, 1939, **2**, 1277) you state that Harrison and Mellanby draw from their work the practical conclusion that the rickets-producing action of cereals can be overcome by increasing the calcium intake—e.g., by drinking more milk. Almost fifteen years ago in a letter to your columns (*Lancet*, 1925, **2**, 205) I gave reasons for suggesting that the pre-eminently pro-rachitic effect of oatmeal amongst cereals was "in all probability due to the very high percentage (6 per cent.) of fat which it contains, and the consequent formation by it in the intestines of insoluble calcium soaps, which are excreted unabsorbed in the fæces." Since Harrison and Mellanby appear so far to have failed to elucidate the cause of the phenomenon in question, I would suggest that the hypothesis put forward by me fifteen years ago might profitably be investigated when a favourable occasion offers.

I am, Sir, yours faithfully,

Cape Town. J. WALKER TOMB.

WEIGHT OF BED-CLOTHES IN CONVULSION THERAPY

SIR,—May I endorse Mr. Gissane's advice against covering bed-clothes during the convulsion? In addition to that, the knees should be raised by means of a pillow, thus preventing the full weight of the leg being thrown upon the femur.

I am, Sir, yours faithfully,

Falmouth. H. PULLAR-STRECKER.

IMPROVISED OXYGEN MASK

SIR,—I have read with interest the note by Dr. Alice Rose and Mr. Holmes Sellors in your issue of April 6 on an improvised mask for administering oxygen. It may be noted that the inventors have used the word "improvised" and with restless patients who require prolonged administration, and who must be fed and expectorate sputum, it seems likely that this model will not be without its drawbacks. Efficient oxygen therapy—always of importance in certain cases—has assumed even greater interest now that we must be prepared to treat war gas casualties. All institutions where oxygen administration is contemplated should surely have equipped themselves long ere this with efficient apparatus, and it should not be necessary to have to improvise it in a hurry. There are several forms of face apparatus of proved efficiency, some of which are illustrated in the British Oxygen Company's film, to which should be added the B.L.B. mask. The results obtained with the improvisation described are most impressive—to attain 50 per cent. O_2 in alveolar air with a flow of 6 litres a minute is no mean feat. But one would like to know what values were obtained for alveolar CO_2. The sampling of alveolar air is full of gins and pitfalls but a high CO_2 figure is good evidence that deep alveolar air is being obtained.

I am, Sir, yours faithfully,

London, W.1. KENNETH ROBSON.

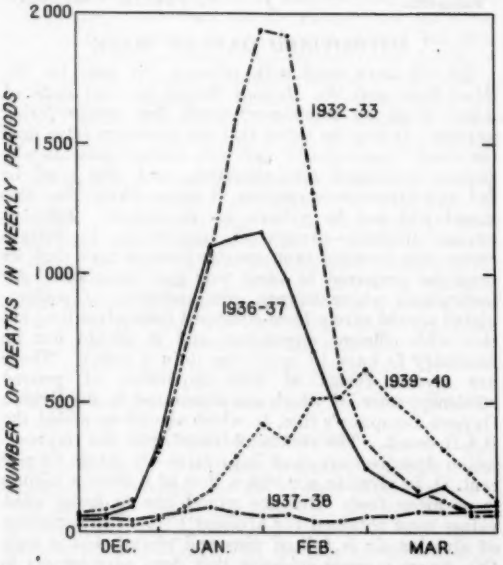
. . . "Like the British Army, medicine and surgery to a large extent have become mechanised. The advances made in medical research in the last quarter of a century in their application have provided means of diagnosis and treatment which can only be made generally available in hospitals. The surgeon requires model operating-theatres with a whole armoury of shining chromium-plated gadgets and instruments to suit his various needs; the anæsthetist is no longer content with a lint mask and a dropping-bottle of chloroform, but needs a whole anæsthetic plant of gas cylinders and glass bottles; X-rays are taken on any and every occasion; electrocardiograms are required almost as a routine; pathological tests increase in frequency and complexity. More and more as the knowledge of these great advantages spreads among the public does the demand come for hospital treatment. This process will be greatly accelerated by the war. . . . But this wonderful armamentarium costs money. That is one of the reasons why the voluntary hospitals find their financial difficulties increasing."—Sir ARTHUR MACNALTY, speaking on Tuesday to the governors of the Royal Free Hospital.

PUBLIC HEALTH

Influenza in Retrospect

THE recurrent epidemics of influenza in this country are, fortunately, almost always confined to the four months December to March. With the issue of the Registrar-General's return for the week ending March 30 it is therefore possible to assess the scale of this year's visitation, as measured by the deaths attributed to influenza in the great towns. In the seventeen weeks from the beginning of December to the end of March there have been 4685 such deaths in the 126 large urban aggregates. In the corresponding weeks of 1938–39 there were 3009, in 1937–38 only 1072. On the other hand, in the epidemic years of 1936–37 and 1932–33 the deaths in the same four months reached 7726 and 10,660. In 1923–33 the peak was reached in the last week of January with over 1900 deaths, in 1936–37 in the same week with 1155 deaths. In the current year the turning point was not till the end of February, the maximum of 629 deaths falling in the week ending Feb. 24.

The epidemic of this year while undoubtedly considerable and expensive has, therefore, not been one of the first magnitude and distinctly slower and later than usual in reaching its climax. The following figures, and graph drawn from them, show its sequence in comparison with that of the non-epidemic year 1937–38 and of the last two epidemic years.



Weekly number of deaths from influenza in the great towns of England and Wales.

DEATHS FROM INFLUENZA RECORDED WEEKLY IN THE GREAT TOWNS OF ENGLAND AND WALES

Weeks in—	1939–40	1937–38	1936–37	1932–33
December	23	46	54	68
	25	52	57	85
	27	46	97	120
	46	59	325	303
January	94	77	768	681
	158	91	1100	1041
	291	73	1137	1589
	416	60	1155	1934
February	350	66	976	1911
	514	40	697	1306
	521	42	423	630
	629	59	242	344
March	512	57	181	242
	429	76	144	157
	315	76	171	119
	221	78	98	65
	114	74	101	65

Closely corresponding weeks have been taken. The last return would be dated March 30, 1940, April 2, 1938, April 3, 1937, April 1, 1933.

DEATHS FROM INFLUENZA RECORDED IN THE GREAT TOWNS OF DIFFERENT REGIONS OF ENGLAND AND WALES

Two-weekly periods ending—	South-east and East	North	Midland	South-west and Wales
Jan. 13	92	87	50	23
,, 27	214	335	121	38
Feb. 10	338	291	180	58
,, 24	412	446	228	64
March 9	284	400	204	53
,, 23	143	262	99	32
Total	1483	1821	882	268
Average weekly death-rate per million on populations of 1938	13·3	20·8	20·8	19·4

Owing to the war-time changes in the distribution of population it is not possible to calculate with any pretence to accuracy the relative incidence of mortality in different parts of the country. The deaths tabulated below for wide areas show that the trend of the epidemic was similar throughout the country, the peak falling uniformly in the two weeks ending Feb. 24, but there appears to have been rather a slow rate of decline in the northern towns. The use of pre-war population estimates gives a rather low rate of mortality in the south-east and east and equality elsewhere, but the difference must, as already stated, be regarded with reserve.

Infectious Disease in England and Wales

DURING THE WEEK ENDED MARCH 30, 1940

Notifications.—The following cases of infectious disease were notified during the week: Smallpox, 0; scarlet fever, 817; whooping-cough, 452; diphtheria, 705; enteric fever, 30; measles (excluding rubella), 4750; pneumonia (primary or influenzal), 1195; puerperal pyrexia, 157; cerebrospinal fever, 521; poliomyelitis, 4; polio-encephalitis, 3; encephalitis lethargica, 7; dysentery, 33; ophthalmia neonatorum, 84. No case of cholera, plague or typhus fever was notified during the week.

The number of civilian and service sick in the Infectious Hospitals of the London County Council on March 29 was 1171 made up of: scarlet fever, 135; diphtheria, 180; measles, 8; whooping-cough, 60; enteritis, 64; chicken-pox, 64; erysipelas, 35; mumps, 14; poliomyelitis, 2; dysentery, 9; cerebrospinal fever, 114; puerperal sepsis, 12; enteric fevers, 8; german measles, 271; other diseases (non-infectious), 85; not yet diagnosed, 110.

Deaths.—In 126 great towns, including London, there was no death from smallpox, enteric fever, or scarlet fever, 3 (0) from measles, 2 (0) from whooping-cough, 17 (0) from diphtheria, 37 (5) from diarrhœa

and enteritis under 2 years, and 114 (6) from influenza. The figures in parentheses are those for London itself.

Birmingham reported 8 deaths from influenza, Burnley, Liverpool and Stoke-on-Trent each 5. There were 12 deaths from diarrhœa at Belfast and 6 at Manchester. Manchester had also 4 fatal cases of diphtheria. London reported 7 deaths from cerebrospinal fever.

Dewsbury's Maternity Services

Of the 809 births notified in 1939 in Dewsbury 767 or 95 per cent. came under the corporation's scheme. The four municipal midwives—there are no midwives in private practice in the borough—attended 376 mothers and summoned medical aid on 98 occasions; 290 women entered the Moorlands maternity home and 101 were delivered in Staincliffe county hospital. On April 1 extensions to the maternity home were opened—the council regard this title as less alarming than "maternity hospital"—and next year there may be more than 450 there. Mr. David Currie has been appointed obstetric consultant and Dr. Jacqueline Keighley resident medical officer. The R.M.O. holds four antenatal and one postnatal clinic weekly, the consultant one clinic. Every patient has the choice of having her own private practitioner called in an emergency or of having the services of the R.M.O. free of charge. Last year a practitioner was summoned on 33 occasions, but most patients do not ask to have their own doctor. The services of the consultant are available for all, except private, patients free of charge.

Municipal antenatal clinics are available for all expectant mothers who wish to make use of them, and those who have booked the services of a midwife and who are not under the supervision of a practitioner are urged to attend. Cases who have booked accommodation at the home must agree to attend unless they are under the care of a doctor and even then one attendance is obligatory. Other auxiliary maternity services provided at Dewsbury are dental treatment, sterilised maternity outfits, convalescent home treatment for mothers and babies, home helps, and free meals for necessitous expectant and nursing mothers. Infant-welfare centres are held in four different clinics and 80 per cent. of the children under one year attend. Like other mill towns where married women go to work Dewsbury had a very high stillbirth-rate. But the rates for the three years 1936 to 38—54, 48, and 39·5 respectively—reflect Dewsbury's care for its mothers.

Points from Annual Reports

In Dr. Mervyn Thomas's report to the education committee of *Chelmsford* for 1939 we get the first account of the evacuation of school-children from the point of view of a receiving municipal borough. The average daily attendance at Chelmsford elementary schools in 1939 was 3138. In September 1253 school-children were sent to Chelmsford from a London area, but by December only 766 remained there. In July 1119 children were supplied with milk on payment and 145 free; in December the numbers were 1590 and 240 respectively. Roughly one in twenty of the Chelmsford children require free milk whereas of the visitors the proportion was one in seven. Of the 709 minor defects treated at the clinics during the year, 235 were in the evacuated children. All the scabies (22); 35 out of 83 cases of impetigo, and 57 out of 161 cases of other skin diseases were in extra-borough children; 9072 head inspections amongst Chelmsford children showed 37 unclean, of which 2 were cleansed by the local authority; 394 head inspections amongst the visitors showed 74 unclean, all of which were cleansed by the authority. Apparently there was no ringworm in any of the children. Ringworm appears to be dying out in all parts of Britain, as favus did eighty years ago, but scabies is increasing again and impetigo is always with us everywhere.

Dr. Cecil Herington of *Dagenham* reports that the estimated population of the borough in mid-1938 was 107,400. The birth-rate in that year was 18·06, which though 2·94 above that of England and Wales was the lowest reported locally. The crude death-rate was 6·19, also a low record. Infantile mortality was 50·51, the stillbirth-rate 30·00 and the illegitimacy-rate 2·58 per cent. of all births. These are the statistics of a healthy young population. Dagenham has made some progress in diphtheria immunisation. Like all towns which have grown mainly by immigration of young people it has suffered severely from diphtheria, but in 1938 the numbers of notifications were low, only 124, though the fatality was high, 9·7 per cent. In children Schick-tested between 1930 and 1938, reaction was positive in 3092 and negative in 1671. These are children of all ages under fifteen years. Positive reaction is found in 42·0 per cent. of children over fifteen. The percentages of positive reactors is low at all ages. Of the children immunised only 5 developed diphtheria, all of whom recovered. It is not clear what was the number at risk amongst which these 5 cases occurred, but we are told that 5086 were found to be immune, so presuming that the 5 cases arose in one year we have an annual attack-rate of 1 per 1000 among the immunised.

Dr. Andrew J. Shinnie reports that of the seven maternal deaths in the city of *Westminster* in 1938 six were caused by abortion, four admittedly and the other two probably induced. Westminster, in common with the other 27 metropolitan boroughs which make up the county of London, and the municipal boroughs of the Outer Ring, is not a true population unit but an arbitrary division of the metropolis. It is one of the 3 metropolitan boroughs which have a persistently low birth-rate, 8·3 in 1938, and high illegitimacy-rate, 138 illegitimate births to 900 legitimate births in 1938. Its stillbirth-rate is low, 27·1, and its infantile mortality low, 54·9. There is a suspicion that its abortion-rate is high, though of the six fatal abortions in 1938 three were in married women. The crude death-rate in 1938 was 10·4 and as the adjusted rate was 10·7 it follows that the population of Westminster is of nearly normal age-distribution.

The administrative county of *East Sussex* contains half a million acres with a population of 298,790, almost equally divided between the urban and rural districts. The geographical unit contains the county boroughs of Brighton, Eastbourne and Hastings which are outside the administrative county but have a common industry. Dr. R. Asleigh Glegg records an infantile mortality of 31, the lowest ever experienced in the county. He attributes the decline to better wages with consequent improvement in nutrition, better sanitation and the spread of education in child culture. An important event in 1938 was the decision of the county council to proceed with some drastic alterations to Darvell Hall Sanatorium, including a new men's hospital block, enlargement of the women's pavilion and a new hostel for nurses. At present tuberculous patients have to be accommodated in poor-law institutions, but when the sanatorium is enlarged this will be unnecessary. The death tables of East Sussex tell us that the county is an artificial population unit. In the urban districts, of 2180 deaths registered 835 were in persons over 75 years of age and 587 in persons aged 65–75, leaving but one death in three in persons dead before the termination of the normal

expectation of life. Of the deaths 649 were attributed to heart disease, 128 to cerebral hæmorrhage, 155 to other circulatory diseases, 85 to nephritis and 354 to cancer. The crude death-rate for the whole county was 12·82, the comparable death-rate 10. The comparability factor for the whole county is 0·78. In the three large towns (Bexhill, Hove, Lewes) with a total population of 94,180 the crude death-rate was 15·41 and the birth-rate 10·21. We are not given the comparability factor for the towns, but imagine it must be below 0·7, for the crude statistics of these towns suggest that their populations are biased by an excess of elderly people with a high expectation of life for the rest of the population. Amongst the 156,600 inhabitants of the urban areas only 121 deaths occurred in persons between the ages of 1 and 35 years, of which 23 were due to violence and 19 to tuberculosis. The chief public-health event of 1938 was an outbreak of 32 cases of poliomyelitis, of which 18 occurred in Cuckfield rural district (population 24,440) and 5 in Cuckfield urban district (population 13,600).

MEDICAL NEWS

University of London

On Thursday, May 2, at 5 P.M. at 1, Wimpole Street, W.1, Dr. F. R. Nager, professor of otorhinolaryngology in the University of Zürich, will deliver the Semon lecture. He will speak on the paranasal approach to intrasellar tumours. Admission will be free without ticket.

Royal College of Surgeons of England

At a meeting of the council on April 11 with Mr. Hugh Lett, the president, in the chair, the John Hunter medal and triennial prize were presented to Colonel L. E. H. Whitby. The Jacksonian prize for 1939 was awarded to Mr. F. F. Rundle (Westminster Hospital) for his essay on the pathology and treatment of thyrotoxicosis, and a certificate of honourable mention to Mr. N. M. Harry (Melbourne). Injuries to peripheral nerves, with special reference to the late after-results was chosen as the subject for the prize for 1941.

Sir Percival Nicholls and Sir Richard Needham were elected fellows under the charter which permits the Council to elect annually to the fellowship, without examination, two Members of the College of twenty years' standing.

A diploma of membership was granted to F. V. A. Bosc (Univ. Coll. Hosp.). Diplomas in child health were granted, jointly with the Royal College of Physicians, to the following:—

Mary R. Anderson, Harry Angleman, J. B. Atkins, J. L. Bates, Felix Besser, V. L. Collins, Gerald Comay, Janet F. Cormick, C. F. Cumings, Marjorie B. Curties, E. W. Dunkley, Joan Franklin-Adams, Esther Hendry, F. P. Hudson, Elizabeth Jacobs, D. de la C. MacCarthy, Benjamin Roditi, A. W. Uloth, P. C. S. Unwin, F. P. Wadia, and Ailsa M. L. Whitehouse.

On May 2 at 4 P.M., at the college, Lincoln Inn's Fields, W.C.2, Prof. R. J. S. McDowall will lecture on the circulation in relation to shock. The lecture will be open to medical practitioners and students.

Royal College of Surgeons of Edinburgh

At recent examinations the following were successful:—

L.D.S.

Jack Auckland, T. B. Binns, D. M. Bryant, E. H. Chalmers, J. L. Clark, J. A. Dixon, A. S. Flockhart, E. L. Hardy, Edward Herivel, James Ireland, G. M. Kindness, H. J. F. Mitchell, J. M. Parker, A. J. Serfontein, Julius Spielberg, J. W. Steer, R. H. Sutherland, Margaret Williams, A. M. Wilson, W. S. Wybar.

Bristol's New Dental Hospital

On April 10 Prof. E. L. Sheridan, president of the Dental Board, opened the University of Bristol dental hospital which has cost £83,000 to which the board has contributed. The board, he said, had been greatly influenced by the assurance from the university that they would undertake to see that all the teaching would be carried out under its ægis. Hitherto dental students have had to do their clinical work at Bristol Royal Hospital and mechanical work at the university laboratory and this has meant a considerable loss of time.

In connexion with the reorganisation of the dental school the following appointments have been made: honorary dental surgeons and clinical lecturers in dental surgery: G. F. Fawn, N. H. Kettlewell, F. C. Nichols, F. R. Hogbin, W. J. Lennox, J. Wells, N. H. Simmonds, S. K. Rigg, L. E. Claremont, Trevor Johnson, R. H. McKeag, and J. W. E. Snawdon; senior house-surgeon: R. S. Martin; and junior house-surgeon: G. R. Styles.

Naval Casualties

Temporary Surgeon Lieutenant D. N. B. Morgan, H.M.S. *Gurka*, has been reported missing, believed killed, and Temporary Surgeon Lieutenant A. P. B. Waind, H.M.S. *Hardy*, seriously wounded.

Royal Medical Benevolent Fund

The annual general meeting of the fund will be held at 1, Wimpole Street, London, W.1, on April 22, at 4.30 P.M. Sir Thomas Barlow, F.R.S., will take the chair.

Westminster Hospital

The ladies' association of this hospital will hold its annual meeting at the medical school on Wednesday, April 24, at 3.30 P.M., when Sir Bernard Docker, chairman of the hospital, will speak on the work of the hospital in war-time.

Royal Sanitary Institute

A joint meeting of the institute with the Yorkshire branch of the Society of Medical Officers of Health will take place in the City Museum, Leeds, on Saturday, April 27, at 10 A.M. Prof. J. Johnstone Jervis, medical officer of health for Leeds, will open a discussion on the Garchey system of refuse disposal.

The Egg as Food

On Wednesday, April 24, at 2.30 P.M., the food group of the Society of Chemical Industry will hold a symposium on this subject. The following will speak: Mr. Joseph Needham, Sc.D. (the biological nature of the egg), Miss Ethel Cruickshank, Ph.D. (its chemical composition), Mr. S. K. Kon, D.Sc. (its nutritive value), Mr. R. B. Haines (preservation and storage of eggs), Miss Mary Andross (the effect of cooking on the egg). Non-members may secure invitations from the general secretary of the society at Clifton House, Euston Road, N.W.1.

National University of Ireland

At a meeting of the senate on April 11 the following resolution was unanimously adopted:—

That we place on record our keen appreciation of the signal services which Dr. Denis J. Coffey has rendered to the University. From the foundation of the University up to a few days ago, he was always a member and was many times Chairman of the Board of Studies, he was always a member of the Senate and he was always either Vice-Chancellor or Pro-Vice-Chancellor of the University. He was scarcely ever absent, from any meeting of the Board of Studies, from any meeting of the Senate, or from any meeting of the Finance or Standing Committees of the Senate. At all these meetings, the members depended to a very great extent on Dr. Coffey for information regarding the Statutes of other Universities, and the Regulations of the General Medical Council. There was no important question discussed at any meeting on which Dr. Coffey did not speak. His views were always listened to with the greatest respect and were generally adopted, for his great anxiety to promote the interests of the University was always recognised, and the accuracy of his judgment was seldom questioned. It would be very difficult indeed to exaggerate the greatness of his work for the University. In his retirement, the University has undoubtedly suffered a very great loss. We are deeply grateful to him, and we wish him very many happy years.

As a memorial to Dr. Coffey's services to the University a studentship is to be known as the Dr. Coffey Travelling Studentship in Physiology.

PARLIAMENT

ON THE FLOOR OF THE HOUSE

By MEDICUS, M.P.

WHEN Mr. Winston Churchill rose to make his statement on the war at sea on Thursday of last week he said that the Admiralty "was working under very sharp pressure in these times," and so there might be minor errors of fact or detail in the statement which he was to make. The fog of war has certainly descended over naval and land operations in Scandinavia and only those on the spot can know what is going on in detail. On the previous Tuesday, the day on which Germany invaded Denmark and Norway, the Prime Minister had not had time to correlate detail reports and it was at that time even uncertain whether Narvik, the iron-ore port in the north of Norway, had been attacked by the enemy or not. But if there are any details which contain minor errors the essential facts are always given in Government statements with, perhaps, that incurable tendency to understatement exemplified in Mr. Churchill's summing-up of his answer to the question "What is the Navy doing?" The First Lord said that he hoped he had shown "that the Navy has not been idle or negligent, and that it is actively proceeding on the tasks confided to it by Parliament."

The great-scale naval operations undertaken have at the moment of writing destroyed or very seriously disabled something between a third and a half of the German fleet. The Navy has also laid mines, shutting off the whole of the Baltic coast of Germany from unimpeded passage, thus completing a vast minefield around the Norwegian, Danish and German coasts. How the Germans will react to this laying of mines in the sea they liked to call a German lake remains to be seen. No doubt, however, there will be, as the official French commentator put it, "very interesting military consequences."

An immediate consequence on our supplies is the cutting down of the ration of paper; whether the temporary shutting off of Denmark from our markets will affect the ration of butter or bacon remains to be seen. That there are stocks big enough to meet all present demands we are assured, but if the war intensifies, as seems only logically probable, it may be necessary as a matter of prudence to keep a bigger reserve in hand.

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Considerations of this nature in relation to manpower, foodstuffs, clothing and all our other ordinary needs will become much more sharply defined in the near future. Another proclamation extending the age for the call-up to older groups is coming very soon and the production of war materials is to be increased still further. Before we are able to foresee a time when the war will end the tightening-up process may become much more stringent. One significant fact about unemployment tells its own tale. The fall in numbers of unemployed is obvious, but a considerable number of men usually considered unemployable, certainly considered unemployable before the war, because they have been out of employment for years, have now been reabsorbed into industry. Some of them are miners who, the Ministry of Labour tells me, have been out of employment for long periods. It is not thought that we shall reach a point at which the unemployment returns are nil, because of the numbers temporarily unemployed while changing from one job to another. This basic figure may be put perhaps at half a million. No social and especially no medical problem arises with regard to this half-million because the period between jobs is provided for out of insurance benefit. If wages and rates of insurance benefit are at a level high enough to secure proper nutrition this group of men will present no special problem. But the group of people who are not returned as unemployed and who are not employable—older men and women, invalids and those in receipt of chronic public-assistance or institutional treatment—do constitute both a social and a public-health problem. For this group we may need to make special arrangements to secure a standard of nutrition at a level high enough to resist epidemic infection.

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The large scale of the issues with which the mind of Parliament is concerned make Parliamentary sittings shorter, and speeches terse. When the Prime Minister announced the invasion of Norway with the momentous consequence that "His Majesty's Government have decided forthwith to extend their full aid to Norway," he spoke for about ten minutes. When Mr. Mander asked whether the attack of Germany on Norway would be brought before the League of Nations, Sir William Davison spoke one sentence: "Has not the time gone past for passing any more resolutions?" Mr. Gallacher, the lonely Communist for West Fife, proposed a complete change of Government to bring the war to a speedy end and although interrupted five times he only spoke for two or three minutes and got no sympathy or support at all even from Mr. Maxton's group. Mr. Maxton himself said, while expressing sympathy for the people of Norway and Denmark, "That if the present mood and temper of the world continue, world-wide chaos will be the result." And Mr. Thorne, the veteran Labour M.P. for Plaistow, had the last word: "In view of the present temper of the House I think the best thing we can do is to adjourn now." The House did not adjourn, the motion being withdrawn, but proceeded to discuss the regulation of agricultural wages in a somewhat chastened spirit and passed it and another bill in less than an hour and a half.

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On Wednesday the Army and Air Force Annual Bill went through its stages very quickly and Mr. Pethick Lawrence raised the question of the suspension by the Government of civil-service examinations which prevents boys and girls, who have been preparing for several years, from entering the service in this way. Mr. Maxton described the suspension as having "the making of a first-class racket." Sir Ernest Graham-Little seemed to think that the decision to suspend the examinations was an example of herd panic and said: "The diagnostic marks of panic are, principally, that there is no relation whatever to reason in the reaction which takes place." Sir Ernest gave as another example the enrolment of "the whole of the consulting personnel of the voluntary hospitals in London in full-time service." If examinations were resumed the number affected would be about 15,000 a year, the largest number collected in any one place in London would be about 1000 and this number could easily be divided up into groups of a hundred strong. This process of division was carried out when 1272 London University matriculation candidates were examined in January this year. Mr. Ernest Evans, who represents the University of Wales, supported the resumption of examinations and

quoted a writer in the *Manchester Guardian* who described the Government's attitude as " a Maginot line of official myopia and obtuseness." The criticism which stung, however, and which Captain Crookshank answered as financial secretary to the Treasury, is that the abolition of examinations has opened the way to patronage and corruption. He ended a long speech by saying that he would have a review of the situation made again with a view to determining whether a reversion to examinations is possible.

There is perhaps boredom in some of the Parliamentary debates, but there is no sign of the chaos which Mr. Maxton feared. And the resistance of Parliament to changes in its rules and orders augurs a healthy belief in the solidity of British institutes. When King Haakon of Norway, hunted by German aeroplanes with bomb and machine gun, said, " All civilisation seems to have come to an end " he expressed what must have been in the minds of very many Czechs, Slovaks, Austrians, non-Nazi Germans, Danes and Norwegians. Parliament more and more feels that this war of the Germans is a war against civilisation—and that is one reason why Parliamentary speeches are shorter and action swifter.

QUESTION TIME

Status of V.A.D. Nurses

In the House of Lords on April 10 in reply to Lord DARYNGTON, Viscount COBHAM, Under Secretary of State for War, said that the status of V.A.D. nurses had been engaging the attention of the War Office for several months. He had asked Lord Daryngton if he would raise the question again in the course of the next few weeks, as he hoped then to be able to give him a full reply as to the agreement that had been reached and the differences which it would make in the status and the general welfare of the women who were employed under the Army Council.

Emergency Medical Scheme

Sir ROBERT BIRD asked the Minister of Health if he was aware that 11 house-physicians and house-surgeons of the Royal Hospital, Wolverhampton, were recruited on Sept. 1 last into the Emergency Medical Service, and were informed that they would be retained in their then posts in the hospital for a period of three months from that date, and that one month later their appointments were cancelled without payment of salary; and was it intended that the same three months' salary should be paid to those 11 doctors as that which had been paid to all house-officers recruited under the same class and whose appointments had been cancelled under like circumstances.—Miss FLORENCE HORSBRUGH replied: The practitioners referred to were enrolled in the Emergency Medical Service last September on a three months' contract involving liability to be called up for service in the first instance at the Royal Hospital, Wolverhampton. No occasion arose for calling them up and their contracts accordingly lapsed without any question of remuneration. I am unable to agree that these officers have received different treatment from others in comparable circumstances.

Sir R. BIRD: Is it not a fact that others who were enrolled in like circumstances have received compensation in respect of the cancellation of their enrolment?—Miss HORSBRUGH: These particular officers at Wolverhampton enrolled and were not called up. In other districts officers enrolled and were called up; and because they were called up they have received remuneration. There was no need to call up these officers; and therefore they did not receive remuneration.

Mr. G. MANDER: Is not that point purely a technicality? Is it proposed to deprive these doctors, because they failed to fill in a certain form, of pay which is going to all their colleagues?—Miss HORSBRUGH: No, I do not think it is only a case of failing to fill in a form, nor is it a technicality. Certain officers in Walsall who were called up had particular work to do; and those who were called up were then liable to be sent to any part of the country where their services were required. Those who were not called up, but were merely enrolled, remain in their hospitals, doing exactly the same work as they were doing before. Mr. MANDER: If we bring to your attention cases which are comparable where payment has been made, will you be good enough to look into them? Miss HORSBRUGH: Officers have been called up only when it was thought necessary to utilise their services.

In answer to a further question the following day Mr. WALTER ELLIOT said: I can find no evidence that my regional officer promised payment to the doctors concerned. The only undertaking given was to receive claims for consideration.

Food Value of Milk

Dr. ALFRED SALTER asked the President of the Board of Education why, in circular 1306, dated March 19, on food education, giving particulars as to the intention of the board, in conjunction with the Ministry of Food, to conduct a public campaign on nutrition and the wider use of home-produced foods, there was no mention of milk or as to its importance as a fundamental item in a healthy diet; and whether he would see that this omission was rectified in future circulars and publications on the subject.—Mr. KENNETH LINDSAY replied: The intention of circular 1306 was to acquaint local education authorities with the purpose and organisation of the public campaign; the circular does not therefore deal with particular items of food. The value of milk, particularly for children, has been strongly emphasised in a leaflet issued in connexion with the campaign. Copies have been sent in bulk to local education authorities for distribution to their domestic subjects staff, and for use by them in connexion with courses and demonstrations.

Dr. SALTER: Is the Minister aware that the circular contained references to sugar, meat and other rationed foods, together with suggestions for cooking and so forth, and that no reference whatever to milk was made from beginning to end?—Mr. LINDSAY: I have the leaflet in my hand and I see the word " milk " several times on it. Viscountess ASTOR: In view of the fact that the drink trade are always telling people that drink is good for them, is it not important that we should advertise in order to make it clear that milk is better?—Dr. SALTER: Is it not a fact that milk is not mentioned in the circular in any way?—No further answer was given.

Price of Liquid Milk

Mr. D. L. LIPSON asked the Parliamentary Secretary to the Ministry of Food if his department had any evidence to show in what way the consumption of liquid milk was affected by the price.—Mr. A. T. LENNOX-BOYD replied: Variations in the price of milk over recent years have been such that it has not been possible to detect any marked effect upon consumption of the seasonal changes in price which have taken place.—In reply to a further question Mr. LENNOX-BOYD said: We are fully acquainted with the consequences in general of price increases on the consumption of a commodity. He added that since the introduction of the cheap-milk-in-schools scheme the consumption among the children has increased from 8,000,000 to nearly 26,000,000 gallons.

Mr. T. WILLIAMS: Is it not the case that all the information at the disposal of the Ministry of Food has gone to show that the steady increase in price has militated against increased consumption among the poor people?—Viscountess ASTOR: Is that not the fault of the Minister of Agriculture?—No further answer was given.

School Medical Services in Northumbria

Mr. DAVID ADAMS asked the President of the Board of Education, what proportions of the children of Northumberland and Durham, respectively, were now receiving from education authorities milk and school meals, medical inspection and treatment, and whole-time education, respectively.—Mr. LYNDSAY replied: In the administrative county of Northumberland 6·4 per cent. of the public-elementary-school children are receiving free milk, but there is practically no provision of free solid meals. All the children receive medical inspection and, where necessary, treatment and about 76 per cent. are receiving full-time education. In the administrative county of Durham 26·8 per cent. of the children receive free milk and 0·17 per cent.

free meals. All the children receive medical inspection and, where necessary, treatment and about 93 per cent. are receiving whole-time education.

Hospitals in Wales

Mr. EDWARD WILLIAMS asked the Minister of Health, if he would state the names and accommodation of hospitals in Wales; their special functions and the prospects of increasing outpatient, isolation, maternity and general hospital accommodation in the near future.—Mr. ELLIOT replied: There are in Wales 213 hospitals and institutions of various kinds, providing a total of 14,326 beds. Further schemes now in progress will provide for 385 further beds. Also 800 more beds will be provided by hutted hospitals at Denbigh and Chepstow.

Notification Fees

Mr. GROVES asked the Minister whether the decision to pay a smaller fee for notifications of measles and whooping-cough than the fee normally paid for notifications of other diseases was come to after consulting any body representative of the medical profession; and whether it was agreed to by any such body.—Mr. ELLIOT replied: I consulted the British Medical Association, who represented to me that the fee should be half a crown. In fixing the fee at one shilling I had in mind the large number of notifications likely to be involved and the necessity for avoiding undue increases of public expenditure.

Central Medical War Committee

Mr. GROVES asked the Minister whether, as the secretary and deputy secretary of the Central Medical War Committee were holding similar posts under the British Medical Association, he would consider terminating their appointment, with a view to an independent, impartial and whole-time secretary being appointed in their stead.—Mr. ELLIOT replied: No.

National Health Insurance

Mr. RHYS DAVIES asked the Minister the total funds issued to approved societies for the first quarter in each of the last four years and the current year, respectively.—Mr. ELLIOT replied: The amounts issued to approved societies in respect of members resident in England and Wales during the period from Jan. 1 to March 31, 1940, and for the same period in each of the previous four years are as follows:—

1936	..	£5,612,000	1939	..	£6,108,000
1937	..	£6,680,000	1940	..	£7,626,000
1938	..	£5,851,000			

Prof. J. C. Drummond's Appointment

Captain L. F. PLUGGE asked the Parliamentary Secretary to the Ministry of Food what exactly would be the functions of Mr. J. C. Drummond, D.Sc., professor of biochemistry, who had been appointed to his department to assist the campaign to guide the public in the right use of food; what was the present number of persons at the Ministry with scientific qualifications; and whether it was proposed to strengthen the personnel of the department in this respect.—Mr. LENNOX-BOYD replied: Professor Drummond is scientific adviser to the Ministry and is available to give advice and assistance on scientific problems arising in any part of the ministry. He is in constant touch with the various organisations which have been set up to deal with scientific questions in which the Government is concerned.

Cremation of Persons Killed in Air-raids

Mr. LIPSON asked the Home Secretary how many local authorities had asked him to exercise his powers to make possible the cremation of those persons killed in air-raids who had expressed their desire for cremation at death; and if he would accede to the request.—Sir JOHN ANDERSON replied: I have received representations on this subject from the Cremation Society and from twenty-four local authorities, and I am in consultation with other departments concerned as to the best means of meeting the point raised.

Medical Diary

Week beginning April 22

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.2.

TUESDAY.—5 P.M., Mr. Gwynne Williams: Ischæmic Gangrene.
THURSDAY.—5 P.M., Mr. Williams: Gall-stones.

ROYAL COLLEGE OF OBSTETRICIANS AND GYNÆCOLOGISTS, 58, Queen Anne Street, W.1.

SATURDAY.—3 P.M., Mr. Morris Datnow: Blair-Bell and his Contributions to Science, with especial references to Cancer Research. (Blair-Bell lecture).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole Street, W.1.

MONDAY

Odontology—5 P.M., Mr. C. Naylor-Strong: Pathology and Treatment of Suppurations around the Angle of the Mandible.

TUESDAY

Medicine: at 4.30 P.M., Dr. William Hughes: Reaction. Dr. E. I. Jones: A Pressor Substance in the Blood of Hyperpietics.

WEDNESDAY

Comparative Medicine: 5 P.M., annual general meeting. Mr. A. S. Parkes, F.R.S. and Mr. J. Hammond, F.R.S.: Induction of Fertility by the Injection of Gonadotrophic Preparations. Prof. J. W. McLeod, Mr. H. Burton, Ph.D., Dr. Anna von Mayr-Harting and Dr. T. S. Macleod: Observations on the *in-vitro* Potency of Sulphanilamide and its Oxidation Products considered in their relationship to the respiratory mechanisms of bacteria."

THURSDAY

Urology: 5 P.M., Mr. J. Swift Joly: Fusion of the Kidneys.

FRIDAY

Disease in Children: 2 P.M., cases. 2.45 P.M. Dr. Norman Capon, Dr. Reginald Lightwood, Dr. W. Burton Wood and Dr. Gregory Kayne: Intrathoracic Tuberculosis in Childhood. Dr. Donald Paterson: 1. Genital Dysplasia. Dr. J. B. Atkins: 2. Acute Toxic Polyneuritis of Adult Type in Boy. 3. Macrocytic Anæmia, associated with Macroglossia, Cephalic Abnormality and Cystic Hygroma of neck in baby.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

SATURDAY.—2.30 P.M. (11, Chandos Street, W.1.), Col. W. Glen. Liston and Dr. P. A. Clements: Trichomonas Vaginalis Infestation.

EDINBURGH ROYAL INFIRMARY.

THURSDAY.—4.30 P.M., Dr. R. C. L. Batchelor: Modern Therapy in Specific Infections. (Honyman Gillespie lecture).

BRITISH POSTGRADUATE MEDICAL SCHOOL, Ducane Road, W.12.

WEDNESDAY.—11.30 A.M., clinico-pathological conference (medical). 2 P.M., Prof. J. H. Dible; Nephritis (2). 3 P.M., clinico-pathological conference (surgical).
THURSDAY.—2 P.M., Dr. Duncan White: radiological conference.
FRIDAY.—2 P.M., clinico-pathological conference (gynæcological). 2.30 P.M., Dr. C. M. Hinds Howell: ward clinic. 2.30 P.M., Mr. V. B. Green-Armytage,: sterility clinic.
DAILY.—10 A.M.–4 P.M., medical clinics; surgical clinics and operations; obstetrical and gynæcological clinics and operations. 1.30–2 P.M., post-mortem demonstration.

NATIONAL HOSPITAL, Queen Square, W.C.1.

MONDAY.—5 P.M., Dr. E. A. Carmichael: Lesions of the Autonomic Nervous System.
TUESDAY.—5 P.M., Dr. J. Purdon Martin: Epidemic Meningitis.
WEDNESDAY.—5 P.M., Dr. Gordon Holmes, F.R.S.: Spinal Injuries.
THURSDAY.—5 P.M., Dr. J. N. Cumings: The Cerebrospinal Fluid in Cerebral and Spinal Injuries.
FRIDAY.—5 P.M., Dr. Holmes: Spinal Injuries.

FELLOWSHIP OF MEDICINE AND POSTGRADUATE MEDICAL ASSOCIATION, 1, Wimpole Street, W.1.

Medical Society of London, 11, Chandos Street, W.1. TUES. and THURS., 5 P.M., Mr. A. J. Cokkinis: War Injuries.—St. Mary's Hospital, Paddington, W.2. (by permission of the hospital). WED., 5.30 P.M., clinical F.R.C.S. class.—Royal National Orthopædic Course, Brockley Hill, Stanmore. FRI., 2 P.M. F.R.C.S. orthopædic course.—Royal College of Surgeons, Lincoln's Inn Fields, W.C.2. (by permission of the college). WED., 3.30 P.M., and THURS., 3 P.M., F.R.C.S. pathology course.—Brompton Hospital, S.W.3. TUES., 5.30 P.M. and THURS., 5 P.M., M.R.C.P. course in chest diseases.—Royal Chest Hospital, S.W.3. MON., WED. and THURS., 5 P.M., M.R.C.P. course in heart and lung diseases.—Royal Cancer Hospital, Fulham Road, S.W.3. MON., TUES. and SAT., F.R.C.S. practical operative surgery course.

On Sunday, April 21, at 3 P.M. Dr. Bethel Solomons will deliver his presidential address to the London Jewish Hospital Medical Society at the Rose Hertz Hall, Upper Woburn Place, W.C.1. His subject will be conservatism in obstetrics and gynæcology.

Appointments

EADIE, R. J., M.B. Glasg., M.R.C.O.G; assistant resident obstetrician at Epsom County Hospital.

LLOYD, O. C., M.B. Camb., graduate assistant in the department of pathology at the Radcliffe Infirmary, Oxford.

MAGNIER, M. F., M.B. N.U.I., resident medical officer at the Public Assistance Institution (emergency medical hospital) Christchurch, Bournemouth.

O'CONNOR, D. M., F.R.C.S.I. hon. anæsthetist to the Norwood District Cottage Hospital, S.E.19.

British Postgraduate Medical School, London.—The following appointments are announced:—

MALLEK, JOSEPHINE, M.D. McGill, house-physician in the department of medicine;

MORGAN, B. L., M.R.C.S., house-surgeon to the surgical unit;

GORDON, W., M.B. Cape Town, house-surgeon to the surgical unit; and

STRINGER, P. R., M.B. Lond., house-surgeon to the surgical unit.

Royal Liverpool Children's Hospital.—The following appointments are announced:—

HOPPER, GEORGE, L.M.S.S.A., anæsthetist;

WETHERELL, J. H. D., M.B. Lpool, anæsthetist; and

GLICK, MYER, M.B. Leeds, resident casualty officer.

Medical referee under the Workmen's Compensation Act 1925: Dr. W. M. CONLEY, West Hartlepool county-court district (circuit No. 2).

Examining surgeons under the Factories Act, 1937: Dr. R. H. DUNLOP (Grantown-on-Spey district, County of Moray); Dr. G. M. STIRLING (Cowdenbeath district, county of Fife).

Vacancies

Altrincham General Hosp.—H.S., at rate of £120.

Barking Borough.—Temp. asst. M.O., £500.

Birmingham, Little Bromwich Hospital for Infectious Diseases.—Jun. res. M.O., £300.

Brighton, Royal Sussex County Hosp.—Cas. H.S., £120.

Canterbury, Kent and Canterbury Hosp.—H.S., at rate of £125.

Cardiff, King Edward VII Welsh National Memorial Assn.—Asst. res. M.O. for North Wales Sanatorium, £200.

Charterhouse Rheumatism Clinic, 56/60, Weymouth Street, W.1.—Hon. clin. assts.

Cornwall, Redruth Hospital.—Two hon. phys.

Coventry and Warwickshire Hosp.—Res. surg. O., £300. Also H.S.'s and H.P.'s, each at rate of £150.

Dudley, Guest Hospital.—Cas. H.S., at rate of £150.

Essex County Council and Thurrock Urban District Council.—Lady asst. M.O., £500.

Essex County Council, Oldchurch Hospital, Romford.—Temp. asst. res. surgeon, £500.

Exeter, Royal Devon and Exeter Hosp.—H.S., at rate of £160.

Grimsby and District Hosp.—H.P., at rate of £175.

Gt. Yarmouth General Hosp.—Two H.S.'s, each £140.

Ilford Borough.—Asst. dental surgeon, £450.

Kidderminster and District General Hosp.—Jun. H.S., at rate of £100.

Leeds City.—Res. M.O. for St. Mary's Infirmary, £250. Also res. M.O. and res. surg. O. for St. James's Hosp., each £350.

Leicester Royal Infirmary.—Obstet. H.S. to Maternity Hosp., at rate of £150.

Manchester City.—Temp. res. asst. M.O., £350. Also asst. res. surg. O. (Grade 2), at rate of £250, for Withington Hosp.

Middlesborough, North Riding Infirmary.—Cas. O., at rate of £150.

Nottingham General Hosp.—Res. cas. O., at rate of £150.

Oldham Royal Infirmary.—Visiting thoracic surgeon, visiting neurological surgeon, visiting gynæcologist, visiting physician, and two visiting surgeons, each 3 guineas per session.

Oxford, Radcliffe Infirmary.—H.P., H.S., and cas. O., each at rate of £100.

Portsmouth, Portsmouth and Southern Counties Eye and Ear Hosp.—H.S., at rate of £150.

Portsmouth, St. James's Hosp.—Sen. asst. M.O., £550.

Prescot, Lancs, Whiston County Hospital.—Jun. res. M.O. at rate of £250.

Reading, Royal Berkshire Hosp.—H.S. and H.P., each at rate of £150. Also Cas. O., at rate of £150.

Royal Masonic Hosp., Ravenscourt Park, W.6.—Two res. M.O.'s, each £300.

Sheffield Children's Hospital.—Clin. pathologist, £350–£400.

Sheffield Royal Infirmary and Hosp.—Res. ophth. H.S., at rate of £80–£120. Also two res. H.S.'s, each at rate of £80.

Shrewsbury, Royal Salop Infirmary.—Res. H.P., at rate of £160.

Southampton, Royal South Hants and Southampton Hosp.—Res. H.S., at rate of £150.

South London Hosp. for Women, Clapham Common, S.W.4.—H.S., at rate of £100.

Stockport Infirmary.—H.S., £150.

Stoke-on-Trent, City Education Committee.—Temp. asst. school M.O., £500.

Stoke-on-Trent, Longton Hosp.—H.S., at rate of £180.

Stoke-on-Trent, North Staffordshire Royal Infirmary.—Resident appointments at rate of £150.

St. Helens County Borough.—Asst. M.O.H., £500.

Surrey County Council.—Jun. asst. res. M.O. for Surrey County Sanatorium, Milford, at rate of £250.

Swanley, Kent, Hosp. Convalescent Home, Parkwood.—Res. M.O., at rate of £200.

Swansea General and Eye Hosp.—Res. anæsthetist, at rate of £150.

Taunton, Taunton and Somerset Hosp.—H.P., at rate of £125.

Warwickshire and Coventry Joint Committee for Tuberculosis.—Jun. asst. M.O. for Memorial Sanatorium, at rate of £250.

Weir Hosp., Balham, S.W.12.—Sen. and jun. res. M.O.'s, £200 and £150 respectively.

West London Hospital, Hammersmith, W.6.—Res. cas. O. at rate of £100.

West Malling, Kent County Council, Leybourn Grange Colony.—Asst. res. M.O., £350.

Winchester Royal Hampshire County Hospital.—H.S., at rate of £175.

Wolverhampton, Royal Hosp.—H.S.'s, each at rate of £100.

Yorkshire, Marguerite Hepton Memorial Orthopædic Hosp., Thorp Arch.—Res. H.S., £100.

The Chief Inspector of Factories announces vacancies for examining surgeons at Knowsley, Salop; Keith, Banff; Ystalyfera, Glamorgan; Nottingham North, Nottingham; Presteign, Radnor; Brenchley, Kent; Market-Bosworth, Leicester.

Births, Marriages and Deaths

BIRTHS

CAUSEY.—On April 11, the wife of Mr. G. W. Causey, F.R.C.S., of Fowey, Cornwall—a son.

DOBSON.—On April 14, at Beckenham, the wife of Surgeon Lieutenant D. C. Dobson, R.N.—a son.

FRANKLIN.—On April 12, in London, the wife of Dr. John Franklin—a daughter.

HOLT.—On April 14, the wife of Dr. L. R. Holt, of Staniford, Lincs—a son.

MARRIAGES

HAYWARD—ACKERLEY.—On April 6, at Worcester, Sydney Thomas Hayward, M.B., to Irene Mary Ackerley, of Llandrindod Wells.

LONG—LEWIS.—On April 11, at Cricklewood, N.W.2, Maurice Long, M.R.C.S., Major, R.A.M.C., to Myfanwy Lewis.

SHEPHERD—HOWELL.—On April 11, in London, George Alexander Shepherd, M.B., to Margot Howell.

TILL—BURNYEAT.—On April 6, in London, Anthony Stedman Till, F.R.C.S., to Joan Ponsonby Burnyeat, Great Missenden, Bucks.

DEATHS

BANKS.—On April 13, Charles Banks, M.D. Glasg., D.P.H., of Barnes, formerly of Calcutta, aged 76.

DAY.—On April 13, at Sandwich, James John Day, O.B.E., M.R.C.S.

GOODWIN-TOMKINSON.—On April 12, in Glasgow, Joseph Goodwin-Tomkinson, M.D. Glasg.

HALLILAY.—On Feb. 14, in Bombay, Herbert Hallilay, M.R.C.S., Lieut.-Colonel, I.M.S. (retd.).

HAWKINS.—On April 16, at Horsham, Herbert Pennell Hawkins, C.B.E., D.M. Oxfd., F.R.C.P., aged 80.

JOHNSTON.—On April 10, at Ditchling, Sussex, Miles Johnston, M.B. Edin., aged 70.

MILLS.—On April 10, in Sydney, N.S.W., Arthur Edward Mills, M.B. Sydney, late deputy chancellor, University of Sydney.

TURNER.—On April 9, in Edinburgh, Richard Turner, O.B.E., M.B. Edin., F.R.S.E., aged 83.

WOOLFENDEN.—On April 10, in Liverpool, Herbert Francis Woolfenden, M.D. Lpool, F.R.C.S., aged 60.

The Lancet 100 Years Ago

April 18, 1840, *p.* 134.

From a note based on a paper by Professor Dieffenbach of Berlin in the Medicinische Zeitung.

In a late number of THE LANCET we announced that Professor Dieffenbach had successfully applied to strabismus the operation of the division of muscles. The following cases illustrate the efficacy of this simple and most successful operation:—

CASE 1.—The subject of this operation was a child seven years old, whose eye was drawn far into the inner angle of the eyelids so as to produce considerable disfigurement. The operation was performed in the following manner:—The head of the child was held against the chest of one assistant, while another with two hooks kept the eyelids widely apart. The operator then passed a third hook, which he gave to a third assistant to hold, through the conjunctiva, and to some depth in the subjacent cellular tissue at the internal canthus. He next fixed a fine double hook in the sclerotica at the inner angle, and taking it in his left hand, drew the eye outwards. Then cutting into the conjunctiva close to the ball, where it is continued from it to the internal canthus, and penetrating more deeply by separating the cellular tissue by the side of the sclerotica he divided the internal rectus muscle close to its insertion with a fine pair of scissors. The eye was immediately drawn outwards by the external rectus, as if it had received an electric shock; and in another instant became straight, so that there was no difference perceptible between its direction and that of the other eye.

NOTES, COMMENTS AND ABSTRACTS

MOBILE NEUROSURGICAL UNIT

THE mechanisation of modern surgery has added to the difficulty of making the advances in surgical technique, many of which depend on the use of electrical apparatus, available near the battle-front. In the field of cranial surgery the Royal Army Medical Corps have approached the problem by constructing a mobile neurosurgical unit which is virtually self-contained. The vehicle of the unit is a motor lorry which carries a separate petrol engine and dynamo. A cable conveys the current to the operating-theatre where it is distributed to theatre lighting, surgical diathermy, operation-table heaters, and suction-pump; the current also charges a 12-volt accumulator for the electro-magnet. The equipment includes two sets of instruments, two folding operating-tables with special folding head-rests, two folding instrument tables, and modern anæsthetic apparatus. Sterilisation of water and instruments is done by primus stoves and the unit also has a high-pressure steriliser for linen and dressings. The personnel, who also travel in the motor lorry, include a neurosurgeon, a neurologist, an anæsthetist, two surgical assistants, and two theatre sisters. It can work as one or two operating teams. The unit is designed to operate chiefly at casualty-clearing stations, but will depend on a parent base hospital for its reserve supplies. It carries sufficient material for several hundred neurosurgical operations and can thus remain in the forward area for weeks at a time. At the casualty-clearing station it will need only a room or tent to operate in, and X-ray services. Otherwise the unit will require no outside aid either for diagnosis or operating. The ingenious construction of this equipment, in which Lord Nuffield has given financial help, may find application at home as well as at the front and in other fields besides neurosurgery.

CYCLOPS IN INDUSTRY

MINTON[1] has made a study of the difficulties that face the one-eyed worker in finding work and carrying it out efficiently. He has examined and followed-up 100 men and women who during the last eight years have had one eye excised at the Royal Eye Hospital. Men with one eye blind from disease, injury or disuse (amblyopia ex anopsia associated with a concomitant strabismus) are at work in such occupations as automatic tool-setting, and drilling with very fine drills which require accurate depth perception and estimation. Minton found in his series that several men after the excision of one eye had regained confidence in their judgment of distance a fortnight after operation. The degree of depth perception and estimation which one-eyed workers develop depends on their intelligence and previous experience, their age, the young doing better than the elderly, and their sex, women being slow in adjusting themselves to new visual conditions. Loss of the dominant eye causes greater disability and delays an adjustment to monocular vision longer than does removal of the other eye. Minton recommends that convalescence after removal of an eye should not exceed two or three months; many workmen do not return for six to ten months. There is no need for the injured workman to remain away from his occupation until his claim is settled in the courts. In all cases of serious ocular injury or loss of an eye he should register in a court a declaration of liability, and this safeguards his legal and compensation interest when he resumes his work. In the metal and engineering trades the accident record of one-eyed men is not above the average. Some of the larger firms allow a worker who loses an eye to return to the type of work he was doing before the accident, and he is often able to do it satisfactorily; in other cases he has to take over a lower grade of work. Other firms will not give the injured man his former work if it is of a highly skilled nature but appoint him to some coarser and simpler task. If the one-eyed worker becomes unemployed he often has great difficulty in obtaining skilled work. A number of firms will not employ him on account of the greater risk of compensation and damages. When a one-eyed man returns to his work for some months he may make mistakes and suffer from headache and eyestrain. In many instances this is only temporary and with encouragement and understanding he is able to carry on, but wage-earning capacity may be reduced. In the conveyer-line system designed by Henry Ford there seems to be scope for the one-eyed and even the blind worker. Minton comments on the unnecessarily high standard of visual acuity (6/6 or 6/9 in each eye) required by some industrial firms on preliminary examination of an applicant for employment. Many engine drivers on the L.M.S. railway have been found fit, on practical tests, with vision of 6/18 in one eye and 6/24 in the other. The Southern Railway's standards are slightly higher—6/12 in one eye and 6/18 in the other without glasses. It is evident that research into the subsequent fate of a workman who loses an eye will help in finding him work in which he will regain his confidence and interest and will not suffer an unnecessary reduction in his wage-earning capacity. It should also serve as a guide to employers and might bring about some adjustment of the law so that the employer's load of risk does not weigh against the worker.

1. Minton, J. *Trans. Ophthal. Soc. U.K.* 1939, **59**, 337.

LOVE PHILTRES

IN Greek mythology Medea was regarded as the greatest adept in the art of preparing love-philtres, but according to tradition it was her sister Circe who first, by means of a herb-potion, transformed a youth for whom she had conceived a passion into a brutal shape. Old Gerarde in his "Herbal" tells us that Circe used the mullein or hag-taper in her magic potions, but Gower says she employed the herbs feldwode and vervaine, both of which have a reputation for magical properties. The Hebrews used the fruit of the mandrake which they called "Love apples" for promoting love and fertility as is told in the old story of Rachel and Reuben in the book of Genesis. Among nations in the Far East, the Hindus are said to have employed the mango, champac, jasmine and asoka for the same purpose, while the Chinese pinned their faith to ginseng root.

The popularity of live-philtres (pocula amatoria) among the Romans is described by Plutarch and Ovid and an overdose of their potions was capable of producing delirium and even fatal results.

The ingredients of some of the "hell-broths" concocted by old women in the Middle Ages were both disgusting and grotesque, and seem to have been selected chiefly for their nastiness. One in which great faith was placed was the mysterious Hippomanes, a growth or caul said to be found in the forehead of a newly born foal. Others were hair taken from the nether part of a wolf's tail, the penis of the same animal, the brains of a cat, newt or lizard, and the bones of a green frog which had been picked by ants. Young swallows were sometimes buried in the earth and after a time disinterred.

The bodies of those found with open beaks when made into a potion were believed to provoke love, while those with closed beaks had the opposite effect. The blood of a red-haired woman mixed with sugar was supposed to be a powerful philtre. The Sicilians used hemp and a potent plant which the Greeks called *Vorax*; if given surreptitiously this was said to kindle love in the breast of the coldest woman.

Even the learned Van Helmont in the seventeenth century believed in love-philtres. He tells us of a certain plant which "if you rub and cherish it in the hand till it becomes warm and then take the hand of another and hold it until it becomes warm, that person

with forthwith be stimulated with love for you and continue so for many days." Other writers recommend human skull, coral and leopard's dung as being powerful for inspiring passion. Satyrion was another favourite herb with the compounders of love-potions, for even its odour was sometimes effective, while cyclaman, purslain, valerian and the humble periwinkle had their advocates. Cummin, too, was believed to be particularly useful in ensuring fidelity and constancy—the cynic will call it an antiphiltre.

In some parts of the country All-hallow Even is still given up to rites in which the gum-resin called dragon's blood and quick-silver play a part. In the north of England girls used to throw these substances on a bright fire while wishing for their affection to be returned by the man on whom they had set their heart. Only a few years ago a Russian Jewess appeared in a London police-court on a charge of obtaining money under false pretences for selling candles into which a deserted wife had to stick pins to attract her spouse to return. When this charm failed the Jewess prepared a magic liquid which was to be sprinkled about the bedroom. So there is still money to be made out of witchcraft.

THE SMALL TYPHOON

Anne Walter, a member of a well-to-do Southern family, was born and bred at Holly Springs, Mississippi. She might have become a social butterfly but chose instead to read medicine, and despite the headshakings of her relations and friends graduated from Pennsylvania in 1893. She went to Soochow as deputy for a colleague, intending to stay there only for a year or two, but as it turned out she spent 44 years in China, first in Soochow and later in Shanghai, fighting filth and prejudice. She married Dr. J. B. Fearn, and her only daughter died at the age of five from amœbic dysentery in the pre-emetine days. Dynamic energy and an inconquerable spirit enabled her to carry on a busy practice, largely among women and children, and also to cope with such plagues, famines, rebellions, wars and refugee problems as arose from time to time. These qualities earned for her the nickname of The Small Typhoon and prompted her, in middle life and with no money behind her, to found a successful hospital in Shanghai and run it on lavish lines. Not content with these activities she founded the first co-educational medical school in China. All persons and nationalities came alike to her; she was on the best of terms with diplomats, mandarins, government officials, coolies and strumpets. Being herself a good mixer she could not understand social aloofness in others and would not allow those around her to divide themselves into cliques. Thus, to their mutual advantage, she entertained at her house people of all sorts and conditions who would not otherwise have met. A rheumatic heart and persistent overwork found her at sixty experiencing a decline in energy which she found irksome. Accordingly she submitted to and benefited by a course of regeneration treatment under Steinach. These are but a few of the facts revealed in a most entertaining biography[1] packed with enthralling stories and written with cheerful vigour.

ITALIAN RICE-FIELD FEVER

FURTHER details of the Italian rice-field fever, originally described by Mino,[2] are given by Babudieri,[3] who was commissioned by the Istituto di Sanità, Rome, to investigate the disease on the spot. According to him one characteristic, not previously mentioned, of this fever that distinguishes it from Weil's disease is that its pathogenicity towards the guinea-pig is but slight, the lesions consisting of multiple punctate hæmorrhages in the lungs, in contrast with the more massive hæmorrhages produced by *Leptospira icterohæmorrhagiæ*. Working independently of Mino, Babudieri carried out serological tests, which led him to believe that the agent responsible for Italian rice-field fever was serologically a new species, although not differing morphologically from *L. icterohæmorrhagiæ*. He named the new species *L. oryzeti* (meaning "of the rice-field"); but soon afterwards he found that it was serologically identical with the Swart strain of *L. pyrogenes* from Java. At the same time, however, he apparently disproved that the Swart strain belonged to the species *L. pyrogenes*. His final conclusion was that both *L. oryzeti* and the Swart strain belonged to the species *L. bataviæ*. Mino, who at first named his new species *L. mitis*, similarly concluded that it was really *L. bataviæ*. At first sight it seems improbable that two strains of leptospira from such distant regions should be the same species; but two facts support such an identification: (1) in Sumatra and in Lombardy the disease is connected with rice-harvesting; and (2) a species of leptospira has been found in Sumatra that is serologically identical with *L. grippotyphosa*, the agent of mud-fever in Central Europe and Russia.[4] Meanwhile Babudieri is investigating a third leptospira, apparently a new species, from 56 cases of fever from the rice-fields. It will be remembered that Mino found one case caused by *L. hebdomadis*. It is not yet known whether the infection with *L. bataviæ* in Lombardy is contracted directly from the water in the rice-field or indirectly through rats.

RADIOLOGICAL DIAGNOSIS OF ILEUS

WE have lately discussed in these columns[5] the interference of gas in the bowels with radiography and measures for removing it. It is not always advisable to remove it, however, for Del Campo,[6] points out that the behaviour of the gas may be used radiologically as a clue to whether a case of ileus is due to obstruction or to atony. He argues that, apart from the already known signs of a fluid level and of the relative amounts of gas in small intestine and in colon, the differential diagnosis between these two forms of ileus, mechanical and paralytic, can be made by noting whether the gas shifts on changing the patient's position. He claims that in peritonitis affecting the small intestine the loops of gut are more or less held together by adhesions, and therefore the gas does not shift with alteration of the patient's position; whereas in obstruction of the small intestine the loops are free to move, carrying the gas with them.

RELIEF OF SULPHANILAMIDE CYANOSIS

IN the *Journal of the American Medical Association* for March 2 (p. 756) J. F. Doughty mentions a case of facial erysipelas he was treating with sulphanilamide in which the patient developed severe cyanosis with headache, nausea and vomiting. He thereupon gave the patient 20 mg. of nicotinic acid three times a day when the toxic symptoms ceased and it was possible to continue with the sulphanilamide. Since then Dr. Doughty has given nicotinic acid to all patients who develop cyanosis or any other toxic symptoms during treatment with sulphanilamide and the symptoms have usually been completely relieved.

THE REGISTER OF VETERINARY SURGEONS, revised to Jan. 1, 1940, can now be obtained for five shillings from the Royal College of Veterinary Surgeons, 10, Red Lion Square, London, W.C. The register contains 3722 names being 63 more than a year ago. During the year 165 new graduates have been added and 3 names restored; there were 93 removals on evidence of death and 12 for other reasons. The acts and charters of the college, formerly incorporated in the volume, are now published as a separate volume at the same price.

1. My Days of Strength. By Ann Walter Fearn, M.D. London: Robert Hale. 1940. Pp. 288. 12s. 6d.
2. Mino, P. *Policlinico* (sez. med.), Aug. 1, 1939, p. 410; see *Lancet*, 1939, 2, 863.
3. Babudieri, B. *R.C. Ist. San. pubbl.* December, 1939, p. 755.
4. See *Lancet*, 1939, 2, 279.
5. *Lancet*, March 30, 1940, p. 605.
6. Del Campo, J. C. *Bol. Soc. Cir. Montevideo*, 1939, p. 311.